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Trabajo Fin de Grado

Rehabilitación y remodelación de viviendas

(Refurbishment and conversion of multistorey building)

Autor

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Escuela Universitaria Politécnica La Almunia

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ESCUELA UNIVERSITARIA POLITÉCNICA
DE LA ALMUNIA DE DOÑA GODINA (ZARAGOZA)

MEMORIA

Rehabilitación y remodelación de viviendas

(Refurbishment and conversion of multistorey building)

Nº TFG: 422.13.194

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1. RESUMEN

El proyecto a desarrollar trata sobre un edificio de viviendas antiguo situado en Aabenra, South Joutland, Denmark. Se van a realizar diferentes modificaciones como la sustitución de las fachadas por otras nuevas adaptadas a la normativa danesa actual. Se va a realizar una ampliación de las escaleras e instalación de un ascensor en cada uno de los cuatro portales que posee el bloque de viviendas. Se procede a reducir el número de viviendas, quedando las restantes con una superficie mayor. También nos centraremos en los acabados finales del interior del edificio así como la parte de acceso a éste.

El cliente para el que realizamos el proyecto es *Kolstrup Housing Association*, el contratista principal será la empresa creada *Cofidis firm*, el resto de especialidades las realizarán diferentes subcontratistas, centrándonos en este proyecto en la parte de albañilería.

El periodo en el que se van a desarrollar los trabajos de obra estará comprendido entre el 02 de octubre de 2.015 y el 02 de octubre de 2.016.

El presupuesto total para la realización de la obra será de 50.020.291DKK (con todos los impuestos ya incluidos.)

Palabras clave: contrato, contratista principal, subcontratista, albañilería, Kolstrup.

2. ABSTRACT

The project is to be developed on a former multistorey building located in Aabenra, South Joutland, Denmark. They will be making various changes, such as the replacement of the facades with new ones adapted to the current Danish legislation. It will make an expansion of the stairs and installation of an elevator in each of the four sites that owns the block. It proceeds to reduce the number of dwellings, leaving the remaining with more area. We will also focus on the finishing touches inside the building as well as part of access to it.

The client for the project is *Kolstrup Housing Association*, the main contractor is the company set up *Cofidis firm*, the rest of the specialties made different subcontractors, focusing on this project in the part of masonry.

The period in which will develop the work force will run from October 02, 2015 and October 02, 2016.

The project sum for the completion of the work will be 50.020.291DKK (all taxes already included).

Key words: contract, main contractor, subontractor, masonry, Kolstrup.

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3. INTRODUCTION

The project to be developed is facilitated by teachers of the 5th semester of Architectural Technology and Construction Management of VIA University College in Horsens, Demnark after seeking the implementation of a project to refursbishment and conversion of multistorey building.

The project is organized into the following sections:

- Contractor
- Tendering
- Contracting
- Starting up / mobilizing
- Construction
- Handing over

3.1. CONTRACTOR

The contents of this booklet are organized on the basis of an average size contractor, which could be a turnkey contractor, main contractor or an individual trade contractor.

No considerations have been given to the corporate form or ownership.

The main emphasis will be put the contractor working as a main contractor and/or individual trade contractor.

The contractor is a member of The Danish Construction Association (Dansk Byggeri) and has a collective agreement with all members of staff.

The company described in the case has not defined any political aims with respect to such issues as innovation, environment, project sales promotion or personnel policy. It is, however, of vital importance that the company complies with current legislation, agreements and codes of practise applicable to this line of business.

3.2. TENDERING

Tendering is a vital part of the company's activities. It is therefore important to plan the tender properly and to carry out a systematic scrutiny of the tender documents - irrespective of project size, contract/tender form and the extend of 'own production'. The company has developed its own procedures with respect to legal and technical scrutiny as well as risk assessment. Likewise, the procedures for building site inspection in connection with the tender have been established.

Upon reception of the tender documents, the contractor analyses the documents in order to identify any conditions that may not be expedient to the main contractor.

A possible outcome of this scrutiny could be that the contractor asks questions to the client, makes certain reservations in his tender, or chooses not to participate in the tender at all.

In accordance with AB92 (General Conditions of Work and Supply in Building and Construction Work) Section 2, subs. 2, tender bids submitted shall be based on information in the received tender documents – consequently, it is important to check that the tender documents received corresponds to the documents mentioned in AB92 Section 2, subs. 2.

The contractor should call attention to whatever errors or shortcomings he might find in the tender documents in order to avoid a possible repetition of the same mistakes in the construction works.

The tender documents should mention that AB92 forms the basis of all agreements in the building project. AB92 defines the rules for the entire building project and describes how rights and obligations are shared between the client and the contractor. In principle AB92 should be employed without modifications because the rules are worked out in such a way that they consider the interest of the client as well as the contractor. Consequently, the contractor should scrutinize the tender documents in order to identify possible deviations from AB92 which may burden him with additional obligations towards the client. Should this be the case, the contractor should seriously consider whether he wants to submit a tender bid.

3.3. CONTRACTING

NEGOTIATION

When bids are made on the basis of The Danish Act on Tender Procedures (Tilbudsloven) the client has the possibility of negotiating with the bidder as follows:

A. When the criteria is 'lowest bid' the client is only allowed to negotiate with the lowest bidder.

B. When the criteria is 'the most economical advantageous' the client is allowed to negotiate with the top three best bids

3.4. STARTING UP

It is important that the project manager gets familiar with the time schedule or works out a time schedule in accordance with the contract

In order to finish work within the scheduled time it is considered essential that the work is coordinated in accordance with planned time, that resources and drawings are available at the right time, and in order to be able to work out a cash budget.

Finally the project manager shall ensure sufficient manning as well as the procurement of all necessary permits and approvals. He shall also ensure that all necessary investigations are made.

BUILDING SITE INSPECTION

The project manager makes a personal inspection of the building site in order to get familiar with site conditions and its nearest surroundings.

The following should be observed and recorded: Technical installations, access roads, welfare provisions, conditions on neighbouring plots, traffic, cleaning and maintenance of roads, fencing, excavations, demolitions, terrain conditions, the possibility of establishing site accommodation, stores and depots.

MANNING AND MACHINERY PLAN

For various reasons it is necessary to work out a manning plan - partly as a part of 'Plan for Health and Safety´ (PHS), and partly to provide the company with an overview of which work resources are occupied during a given period of time.

It is possible to work out a histogram showing when there will be a need to level out resources and also showing peak loads on welfare installations.

An equipment plan should be worked out showing which machinery/equipment will be used at given times - referring to own equipment as well as hired equipment. Cranes, lifts/hoists, tents, and containers should also be entered in the plan.

QUALITY ASSURANCE

Quality control procedures, forms and other documentation worked out by the individual trade contractor must be approved. Also the individual trade contractor shall be informed that quality assurance is part of the agreed output as stated in contracts and agreement forms.

The individual trade contractor also participates in project examination meetings (kick-off meetings) and the starting-up meeting.

PRODUCTION CALCULATION

On the basis of the changes that have been made during the planning of the building project, the contractor works out a so-called production calculation.

Whatever changes have been made during the planning phase shall be worked into the calculation. Such changes could refer to savings on sub-contracts, changed material prices, changes in project, errors identified etc.

The revised production calculation will subsequently form the basis for the stage assessment of the building project which usually takes place once a month.

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3.5. CONSTRUCTION

ORDER- AND DELIVERY PLAN

The trade contractor is responsible for preparing an order - order cancellation - and delivery plan in keeping with construction progress. The individual trade contractor shall also observe such services/materials that may be supplied by the client.

Delivery plans are based on a system where the materials are delivered at the building site according to need and at the location where they are needed.

Delivery plans help to:

- Create a regular flow of materials with few urgent orders
- Reduce storage needs at the building site
- Reduce material damage and waste
- Optimize the total time used on planning and control of materials
- Avoid accidents related to the internal transfer of materials at the building site.

CONTROL PLANS

The client defines his quality demands in the tender documents in the form of tender control plans. During the starting up phase, and based on these plans, the contractor works out his own control plans for delivery control, process control and final control. These plans are filled in during the building project and are handed in at handover.

FOLLOW-UP - AND KEEPING THE TIME PLAN

In a successful building project the keywords are: Planning and management.

The following issues should be considered when planning and managing a building project (may vary in accordance with the size and type of project in question):

- The framework of the contracted tender time schedule must be enforced
- Basically, the time schedule shall be realistic – incorporating planned inclement weather days
- It may be an advantage to include all trades in the detailed implementation planning (this could be done through workshops in connection with the start-up meeting)
- Time-crucial deliveries shall be attuned with the detailed plan
- Running update/status on forthcoming work, supplies and issues that might disturb the planned work should be carried out and recorded in the minutes of the weekly site meetings
- Follow up may be carried out using 1 and 5 week plans respectively.

PAYMENT/CONSTRUCTION ACCOUNTING

In principle, the payment for building and construction work may be carried out as follows – Cf. AB92 section 22 :

- Subs 1: Monthly interim payment certificates.
- Subs 2: Installments plan

The principle of monthly interim payment certificates is as follows: By the end of each month, the contractor and the client calculate the total value of work carried out at the site. This amount is deducted the value of work already carried out and paid for. The difference corresponds to the value of the work carried out during the month in question. Payment is carried out as agreed in the contract.

In case of overdue payment, the client is bound to pay interest as from the day the interim certificate was received until the day of actual payment. This mode of payment is the most commonly used – not only between client and contractor but also between contractor and his sub-contractor(s).

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FINAL PAYMENT

Within 35 workdays of handing-over, the main contractor shall submit final accounts to the client- cf. AB92 section 22. The final accounts must be final. Due to inclement weather it may not, however, be possible to terminate certain works, for example garden work. In such cases a certain amount of the final payment can be withheld, or it can be agreed to convene yet another handing-over meeting where uncompleted parts are being finally inspected and accounts settled.

In case the client is not in receipt of the final accounts at the expiry of 35 workdays of handing-over, he may submit a demand requiring the account to be forwarded within 10 workdays thereof.

If the contractor fails to submit the account to the client within this period, he shall forfeit his right (i.e. he looses his right) to claim payment as reimbursement for wage and price increases - cf. AB92, section 22 subs. 8 and 9.

1 AND 5 YEARS INSPECTIONS

The client summons the contractor for an inspection of the work which shall take place one year after handing-over, at the latest. The client also summons the contractor for a final inspection of the work which shall take place at the latest 30 days prior to the expiry of a 5 year period after handing-over. The invitation deadline is defined in AB92 section 39. for In case the client has not summoned for the inspection as mentioned, the contractor may summon the client. The contractor's invitation shall be in writing and made minimum 10 workdays prior to the day of inspection.

The condition and possible defects are registered during the 1-year inspection.

During the 5-years inspection it is controlled whether essential defects established during the 1-year inspection have been rectified. Also such defects that the client may have established after the 1-year inspection are registered.

Special rules apply in case works are covered by The Danish Building Defects Fund (Byggeskadefonden).

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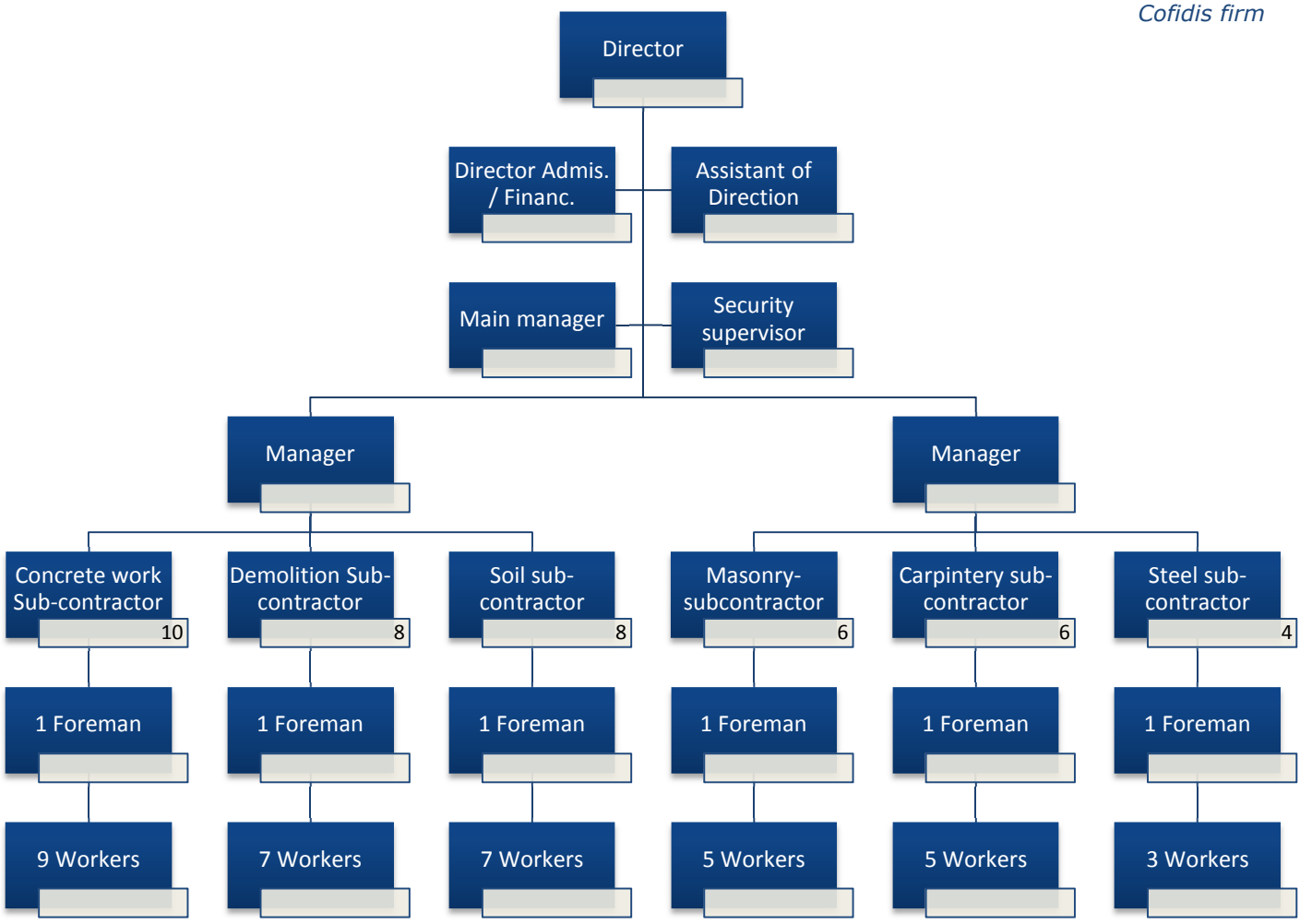
4. DEVELOPMENT

4.1. CONTRACTOR

4.1.1. Company organigramme

Cofidis firm



4.1.2. Employment contract

dansk byggeri

The Danish Construction Assosiation and the BAT cartel

Ansættelsesbevis/Employment contract

Mellem **arbejdstager**/Between **employee:**

Navn/Name:
Adresse/Address:

CPR-nr./CRN-no.:
Tlf.nr./Tel.no:
Pengeinst./Bank Account:
reg.nr./reg.no: kto.nr./Account no:

og **arbejdsgiver**/and **employer:**

Navn/Name:
Adresse/Address:

CVR-nr./CVR-no.:
Tlf.nr./Tel.no:

1 Ansat pr./Commencement of employment: Dato/Date: _____ Måned/Month: _____ År/Year: _____

Medarbejderen er beskæftiget på: Bygge og anlæg./The employee is engaged in: Construction industry ☐. ikke permanente arbejdspladser/non permanent work places

Medarbejderen er beskæftiget på: Permanent arbejdsplads./The employee is engaged on: Permanent work places ☐. Indsæt adresse/Insert address: _____

Ansat som/Engaged as: ☐ Specialarb./Spec. Worker. ☐ Murer/Bricklayer. ☐ Murerarbejdsmand/Bricklayer-assistant.
☐ Stenhugger/Stone-mason. ☐ Brolægger/Paver. ☐ Maler/Painter. ☐ Tømrer/snedker/Carpenter/Joiner.
☐ Tækkemand/Thatcher. ☐ Glarmester/Glazier. ☐ Træindustriarbejder/maskinsnedker/Wood worker/woodcutting machinist.
☐ Gulvlægger/Floor layer. ☐ Elektriker/Electrician. ☐ Industrilakerer/Industrial lacquerer.
☐ Metalarbejder/VVS/Metal worker/Plumbing, Heating and Sanitation. ☐ Andet/Other: _____

2 For ansættelsesforholdet gælder den mellem/For the conditions of employment between:

_____ (arbejdsgiverforening)/(employers' association) og/and _____ (lønmodtagerorganisation)/(employees' organisation)

gældende overenskomst/this collective agreement is in force: _____

3 Arbejdsmarkedspension/Labour market pension: Ja/Yes ☐ Nej/No ☐.
Hvis "nej" anføres manglende anciennitet i måneder/ If "no" please note lack of seniority, in months. : _____

4 Den personlige timeløn udgør på ansættelsestidspunktet ved timelønsarbejde/The personal hourly rate of pay amounts at time of employment with hourly work to: _____ DKK.

Lønnen udbetales/The wage is paid: Ugentligt/Weekly ☐ Hver 14. dag/Every two weeks ☐ Andet/Other: _____

Derudover kan der forekomme overarbejdsbetaling, forskudttidstillæg, betaling for ude- og rejsearbejde og genetillæg, efter ovennævnte overenskomst./Further there might also be overtimepay, addition for staggered hours, payment for travelling work and nuisance bonus, according to the collective agreement.

Ferieregler følger ligeledes ovennævnte overenskomst./Holiday provisios must also comply with the collective agreement.

Der kan forekomme akkordarbejde, hvor prisen fastsættes efter reglerne i overenskomsten, og arbejdsopgavens varighed er tidsbestemt, ligesom der kan forekomme forskellige produktionsfremmende lønsystemer, som ligeledes fastsættes i henhold til overenskomsten./In case of piecework the price will be fixed according to the provisions of the collective agreement, and the task duration is limited. Different incentive payment systems may also exist, which have to be fixed according to the collective agreement.

Der kan være indgået lokalaftaler./Local agreements may have been entered.

5 Antal arbejdstimer ved deltidsbeskæftigelse/Number of working hours at part-time employment: _____ timer/uge/hours/week.

6 Helbred/Health:
Medarbejderen bekræfter, at han ikke er bekendt med at lide af en kronisk eller anden sygdom, som vil have væsentlig betydning for medarbejderens arbejdsdygtighed ved det pågældende arbejde./The employee confirms that he/she does not suffer from a chronic or any other disease, which may have a negative effect on the employee's ability to carry out the work in question.

7 Fravær – sygdom/Absence - sickness:
Ved sygdom skal der gives besked til firmaet på telefon, senest den 1. sygedag ved arbejdstids begyndelse/In case of sickness the employee must call in sick to the company, at the latest the first day of sickness at the beginning of the working day. Tlf./phone no.: _____

Hvis tro- og loveerklæring er udleveret, skal denne tilsendes firmaet 1. sygedag/If a solemen declaration has handed out, the employee has to forward it to the company – valid from the first day of sickness.

Ved sygdom udover 4 dage kan der blive krævet lægeerklæring/If the period of sickness exceed 4 days, it may be necessary to show a medical certificate.

Fravær – øvrigt/Absence – in other respects:
Alt øvrigt fravær, f.eks. ferie o.l. skal være aftalt/All other absence, as for example holiday etc. has to be agreed.

8 Medarbejderen er ansat i virksomheden til udførelse af arbejde under ovennævnte overenskomstforhold/The employee is engaged in the company to carry out work according to the abovementioned conditions of the collective agreement.

Den/Date: _____

Virksomheden/Company: _____ Medarbejderen/Employee: _____

VEJLEDNING/GUIDANCE

Til punkt 1/Re point 1:
Ansættelsestidspunktet angives./Date of engagement has to be stated.

Der henvises til overenskomstens regler om definition på permanente arbejdspladser./Please refer to the rules of the agreement as the definition of permanent work places.

Hvis der på ansættelsestidspunktet er tale både værksteds- og udearbejde krydses begge rubrikker af./If work is carried out both in the workshop as well as outdoor, please fill in both spaces.

Afkryds det fag den ansatte skal beskæftiges i./Please mark with an X the employee's trade.

Efter krydsrubrikken "andet" angives fag der falder udenfor de rubricerede, f.eks. møbelpolstrer, arbejdsdreng eller andet./After the space "other" you can state the trade which is not categorised, e.g. upholsterer, boy etc.

Til punkt 2/Re point 2:
Som arbejdsgiverforening angives **Dansk Byggeri**./Employers association: please write the Danish Construction Association.

Som lønmodtagerorganisation angives det forbund, der er lønmodtagerpart i de overenskomster, som Dansk Byggeri har med medlemmer af BAT- Kartellet. Det er lønmodtagerparten, som skal anføres og ikke det forbund, som medarbejderen er medlem af./Employee's organisation: please write the trade union (member of the BAT-cartel) which has signed the collective agreement, and not the trade union of which the employee is a member.

Medlemmer af BAT- Kartellet er følgende forbund/Members of the BAT–cartel:

- Fagligt Fælles Forbund 3F (herunder Murerarbejde)/United federation of Danish workers (3F) (including bricklaying)
- Forbundet Træ- Industri – Byg I Danmark/The Timber, Industry and Construction Workers`Union in Denmark
- Dansk Metalarbejder forbund/Danish Metal workers union
- Malerforbundet i Danmark/Painters Union in Danmark
- Dansk EL-forbund/Electric Workers Union in Denmark
- Blik- og Rørarbejderforbundet i Danmark/Plummer's Union in Denmark

Til punkt 3/Re point 3:
Oplysningen skal gives af medarbejderen./The information should be provided by the employee.

Anciennitet er opnået efter 6 måneders erhvervsarbejde uafhængig af branche. NB. Medarbejdere, der ansættes efter overenskomsten mellem Dansk Byggeri og Malerforbundet I Danmark, skal have 6 måneders anciennitet under en overenskomst I branchen. Anciennitet optjenes på tværs af virksomhedstilknytning. /The seniority is made after 6 months of industrial employment, independent of branch of trade.
Please note that employees finding employment in accordance with the agreement between the Danish Construction Association and the Painters Union in Denmark must have 6 months of seniority under an agreement in the branch of trade. The seniority is made in defiance of company affiliation.

Såfremt ancienniteten på 6 måneder ikke er opnået, skal det præcist anføres, hvor mange måneder/uger der er tilbage, før ancienniteten er optjent./If the seniority of six months is not yet reached, please state the exact number of months/weeks left, before the seniority is obtained.

Til punkt 4/Re point 4:
Forekommer der andre lønafregningsformer, skal disse vedhæftes nærværende bevis./If any other wage system is valid, please attach it to this contract.

(I henhold til overenskomsten mellem Dansk Byggeri og Malerforbundet i Danmark sker ansættelsen udelukkende til akkordløn/According to the agreement between the Danish Construction Association and the Painters Union in Denmark, the employment is only on piece-rate pay).

Til punkt 6 og 7/Re point 6 and 7:

Såfremt der i personalehåndbog e.lign. eksisterer andre regler udstreges punkt 6 og 7, og gældende regler udleveres sammen med ansættelsesbeviset./If the staff manual includes other provisions, you have to cancel point 6 and 7, and the current provisions must be handed out together with the employment contract.

4.1.3. Employment dismissal

Name__ _____ CPR nr:_____

Address:_____

We regret to inform that you are with the point of termination notice to resign from your job by the end of workday

Cause of dismissal:

Settlement agreement compliance

X Labor shortage

Other reason

Any other reason: _____

Place/date: Building _____

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

4.1.4. OA

DESCRIPTION OF THE COMPANY

Navn: The contractor

Adress xxxxxx

The contractor A/S execute all type of constructionswork based on main- or tradecontracts. The company is established in 19xx by master carpenter Jens Peter as a private company including a small machine shop, which was producing windows and doors. The company was in 19yy reorganized to a family owned limited company simultaneously with participating first in individual trade contracts and later also main contracts. The company participate in public and selected tenders and construct buildings by own means.

This Q.A.Handbook is elaborated by Contractor Ltd. and published in a registered part 1 and an unregistered edition part 2. The registered edition is numbered, and revisions will be sent to the owners of the Q.A. Handbook according to a distributionlist. The registered edition is for internal use at Quality- trade Ltd. The unregistered edition is sent out to costumers, authorities etc. in connection with prequalifications and will not be part of the ongoing revision.

Date:

Managing Director Contractor Ltd.

QUALITY GOAL

It is the politic of Contractor Ltd. to deliver buildings and civil works of good workmanship quality corresponding with the expectations of our costumers. The requirements this politic put to the company and the employees, make it necessary to follow the guidelines, stated in the following Q.A. Handbook. The Handbook shall therefore be known and accepted by all employees in the company. The Q.A. Handbook accounts for our Quality politic, describe the organization of the company including the procedures and company habits, which are used to ensure the fulfilment of the Quality politics.

It is the declared goal of the company to appear as a Quality-concerned company, executing the trades at a workmanship level, which in all aspects, fullfill the costumers expectations, and as a minimum fullfill the demands set by law at any time including the departmental order regarding Quality assurance 2001. All trades are executed with due consideration regarding environmental impact, work environment (Safety and Health) and usage of resources including handling of waste.

The usage of substances, harmful for environment, shall be limited, just as noise- and dustpollution for other workers on the trade including neighbours to the building site. The company have implemented a Quality Management system which is documented in the following Q.A. Handbook that is known and used by all employees in the company.

The handbook is divided up in 3 independent parts.

Part l contains goal and politics, handed out free and will not be maintained at the individual owner.

Part 2 contains a documentation of the companys procedures. It is numbered and not for handing out. It will also contain certain forms and other aids for the execution of Quality Management.

Part 3 which is elaborated for the individual trade, and is for the clients disposal. This part will be maintained according to need.

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POLITICS

Services

A good and satisfactory quality for the client is a crucial competition factor for the company and by that, the survival of the company. Therefore all trades have to go through a complete scrutinity and client's important Quality demands and eventually environmental demands have to be clearly and unambigious agreed. The trade manager shall during the execution supervise fulfilment of all agreements. The responsible person shall ensure an acceptable solution for the company and that execution can be done in the agreed time, before agreements for tasks are made.

- Following are pre conditions for the company to ensure delivery of the right Quality at any time,
- That the requested Qualitydemands to the services of the company are covered through a systematic Quality management in all levels from marketing to delivery,
- That feed back from clients are collected and elaborated,
- that the client allways get what have been promised in the agreed time corresponding with specifications,

Based on the Quality goal, the list of common known Quality problems and a general wish for Quality improvements, the director elaborate specific Quality objectives which are measureable. The director elaborates a plan of action for the individual Quality objective, which as a minimum contains:

- the actual Quality objective divided in measurable intermediate aims
- who is responsible for the individual intermediate aim
- time schedule with intermediate aims
- planned moment for completion of the Quality objectives
- how the Quality objective are achieved (methods, equipment, new work instructions)

criterias for evaluation of achievement of the Quality objective (e.g. method for measurements).

Purchase.

Before ordering, an assessment of the suppliers ability and will to fullfill our demands is needed, to ensure usage of the right materials in the required Qualitylevel. All materials have to be controlled according to controlplan for delivery control, when receiving at site.

Staff education

All staff members of the company shall have a possibility to participate in courses or get job training within their field of work. Managing staff and key persons have an obligation to keep up dated with the technological development in their field of work.

Good Quality is produced by motivated and professional skilled staff, that the Contractor Ltd. wishs to attract and maintain.

Environmental impact

It is the politic of the company to limit the energy consumption of installations and transport.

Quantities of waste shall be reduced by a better usage of materials, and the waste shall be sorted out to ensure maximum recycling. The usage of substances harmful to the environment shall, if possible, be reduced by replacing with other less dangerous substances. The company aims to improve environmental efforts by up dating the detailed environment objectives. The environment objectives and their implementation status are communicated to the staff simultaneous.

The director formulates a environmental goal based upon the environmental politic of the company, the possible environmental impact caused by the implementationprocess including economy and operationconditions of the company. The director elaborates a list with normal occurring environmental impacts. The director elaborates specific measurable environmental objectives, which are based on the environmental goal and the list of normal occurring environmental impacts. The director elaborates an environmental plan of action for each environmental objective, which as a minimum contain:

- the actual environmental objective
- who is responsible
- time schedule with intermediate aims
- planned moment for completion of the environmental objectives
- how the environmental objective are achieved (methods, equipment, new work instructions)

criterias for evaluation of achievement of the environmental objective (e.g. method for measurements).

Clientcontact.

It have to be ensured when entering into agreements, by a complete analyze that the client's need and expectations to the executed work will be fullfilled, that his requirements get fullfilled including needed corrections of his expectations.

All enquiries from the client regarding defects and defiencies of executed work are replied with a proposal for solving the problem within 5 days from receiving the enquiry.

Selection of sub-contractor.

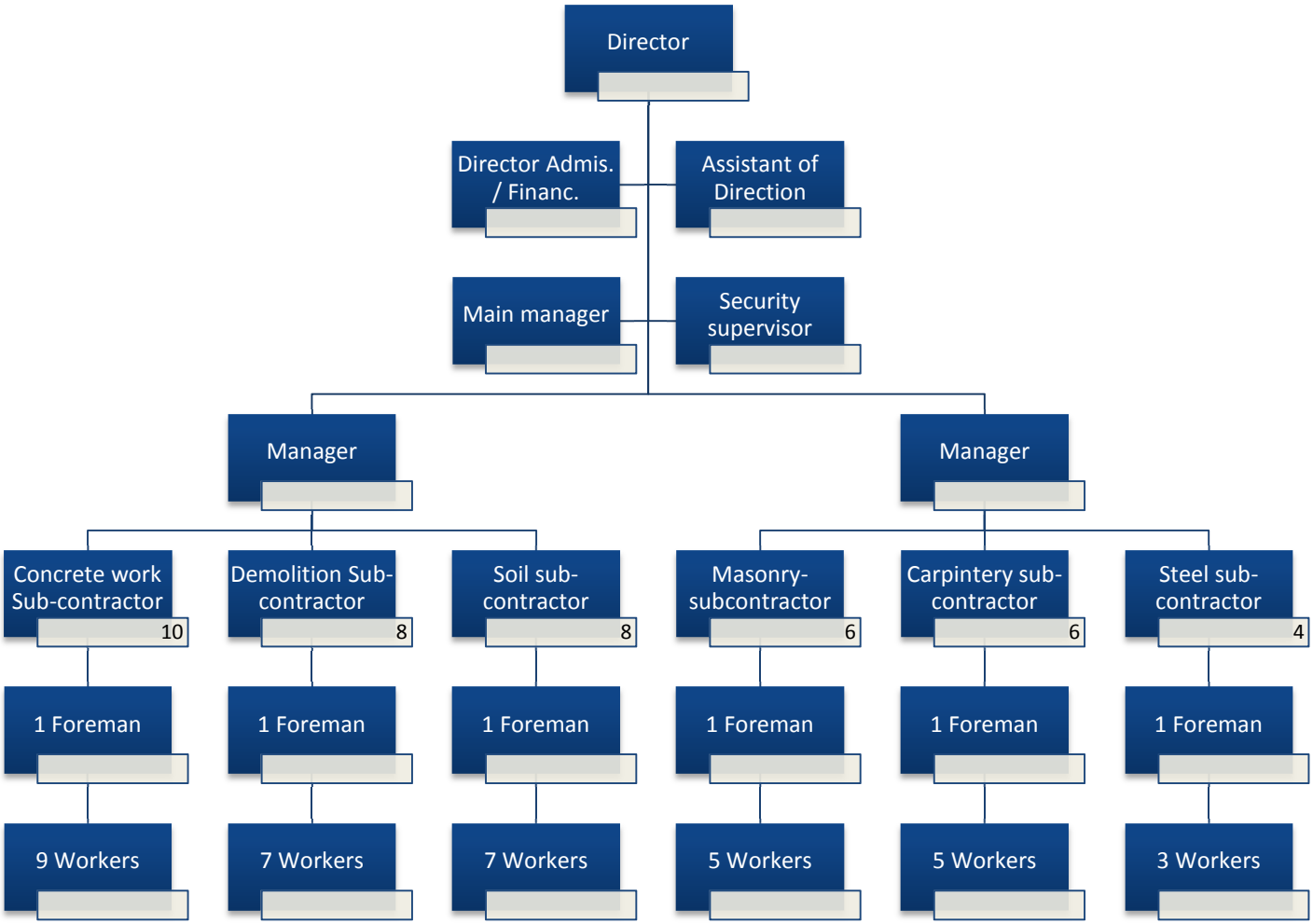
Sub-contractors and suppliers shall serve the company the best they can, in business and quality. This means:

- that we have to select confident sub contractors and suppliers in which we believe can execute the project regarding Finance and Quality and can fullfill the requirements in the project.
- That we shall consider and treat our sub contractors and suppliers as equal collaborators.

That disputes shall be settled by negotiations and not in court.

ORGANIZATION

It is emphazised that the individual effort has an influence on both the quality of the executed work and the impact on the environment, and therefore the employee should know her/his rigths and duties, included the demands to the executed work. The management of the individual functions is responsible for information and education of the employees needed to fullfill these demands. The director has the overall responsibility for an effective Quality- and Environmental Management, which fullfill the demands in the Handbook and is liable to the authorities.



Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

FUNCTION DESCRIPTIONS

Director: Alfonso Bermúdez

Project manager: Yolanda Calvo

Site manager: Borja Escanero

Foreman: Nuria Mateo

Calculation: Salvador Calvo

Purchase: Clemente Mateo

4.1.5. Wage company budget

Budget : Cofidis				
Number of workers	55	Contribution margin		20%
Manhours / year / man	**1550**			
Hours / man / year	**85272**			
Costprice / man / hour	259,03	Coming from calculation of hourly wage.		
	Tus.kr	Tus.kr	% off turnover	
Turnover		**138049**	***100***	
Wages	**22088**		***16***	
Materials	**27610**		***20***	
Sub cuntractors	**55220**		***40***	
Machinery	**5522**		***4***	
Total variable costs		**110439**	***80***	
Margin in thousand Kr.		***27610***		
			20	
Capacity costs	**9%**	**12424**	***9***	
Earning margin		***15185***	***11***	
Depreciation (capital costs.)	**1%**	1380	***1***	
Running result		***13805***	***10***	
Banking and financial interest		25	***0***	
Netproceeds	**124269**	***13780***	***10***	

Capacity costs. omkostninger			
Total capacity costs. From Anlægs Teknik 2			10%
Distribution of these			
Depriciation		=	1%
Capacity costs. omkostninger		=	9%

	Thou. Dkr.	Thous. Dkr.	% af VC
Turnover		138049	
Wages	22088		*20*
Materials	27610		*25*
Sub contractors	55220		*50*
Machinery	5522		*5*
Total variable costs.	110439		***100***

Foremann and site manager works

A Foremann can handle 5 to 10 workers in works

A Contract manager have a turnover from 10 to 15 mill kr in ownproduction

A Site manager have a turnower from 25 to 30 mill kr with supcontractors works

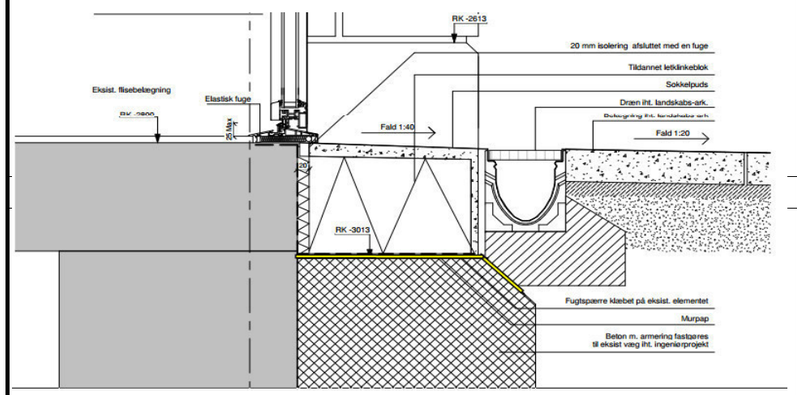
Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

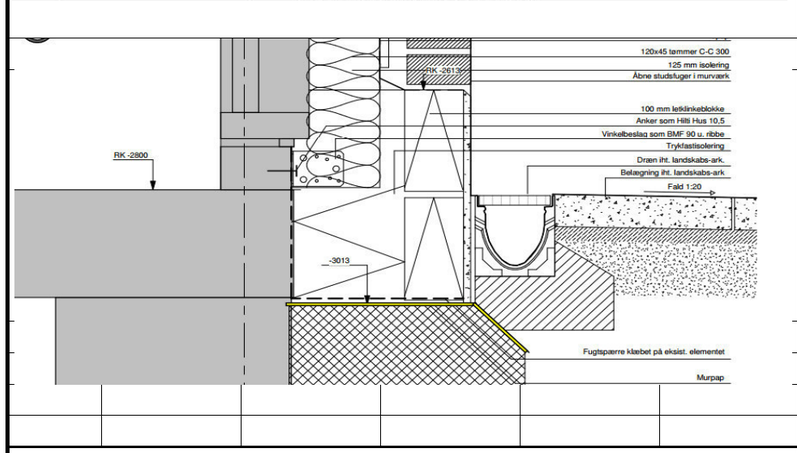
4.2. TENDERING

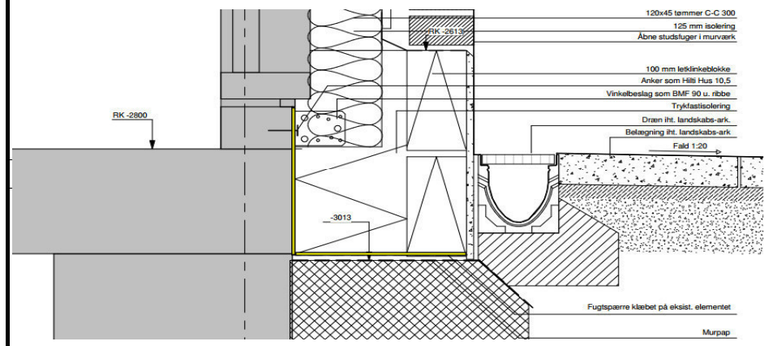
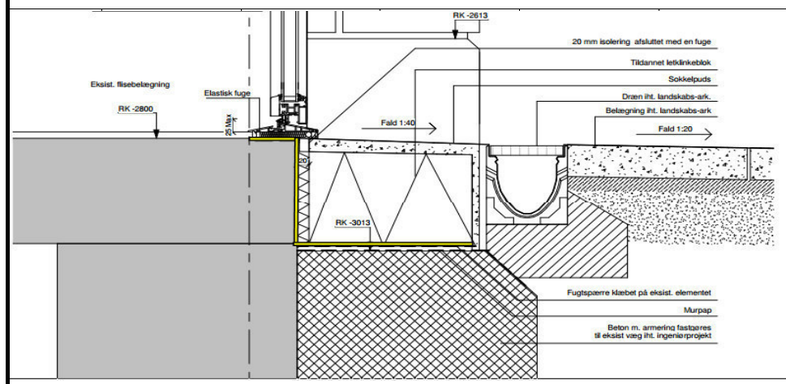
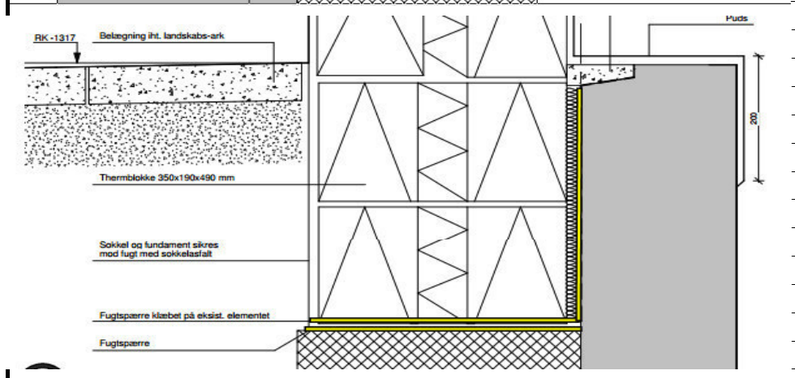
4.2.1. Masonry

4.2.1.1. Quantities

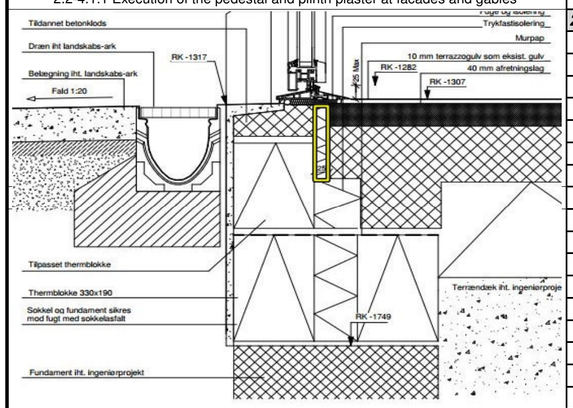
Calculation of quantities schedule							Company		Cofidis firm		
Case: Kolstrup Housing Association									Page	1	
Contract: 2.2 Masonry work	Waste	insulation	10%						Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%						Date	March 2015	
Drawing nr. A112, A212, A213, A606, A607	Waste	plaster	5%								
	Waste	membrane	2%								
	Pos. Nr	Area/ location		rm	m	Total m2					
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables											
	2.2-4.1.1.1	***Bitumen Paint***									
		East gable									
		Area 16									
		Plinth A 606		0,4	1,8	0,72					
		Plinth A 607		0,435	12	5,22					
		South facade									
		Area 16									
		Plinth A 606		0,4	9,5	3,8					
		Plinth A 607		0,435	11,8	5,13					
		Area 14									
		Plinth A 606		0,4	12,2	4,88					
		Plinth A 607		0,435	8,8	3,83					
		Area 12									
		Plinth A 606		0,4	13,3	5,32					
		Plinth A 607		0,435	7,8	3,39					
		Area 10									
		Plinth A 606		0,4	10,9	4,36					
		Plinth A 607		0,435	10,6	4,61					
		West gable									
		Area 10									
		Plinth A 606		0,4	1,8	0,72					
		Plinth A 607		0,435	12	5,22					
Proces quantities/ methods											
	Quantities netto					47,21					
	Waste				2%	0,94					
	Quantities total					48,15					

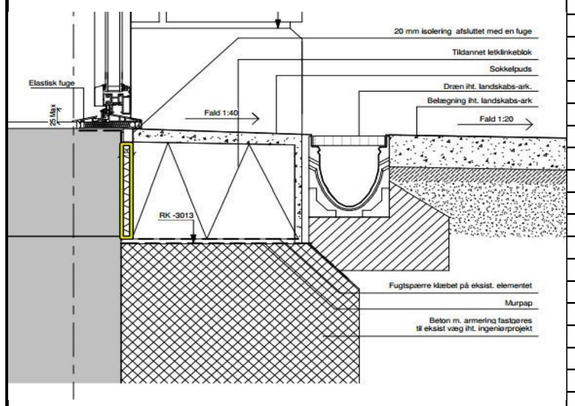


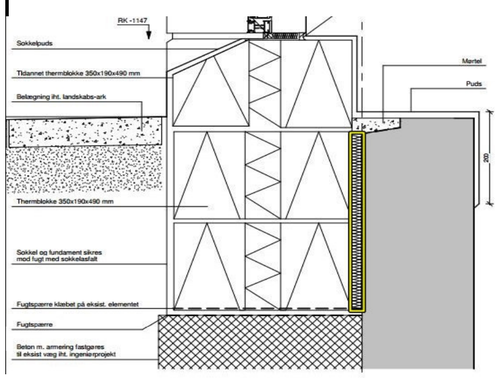


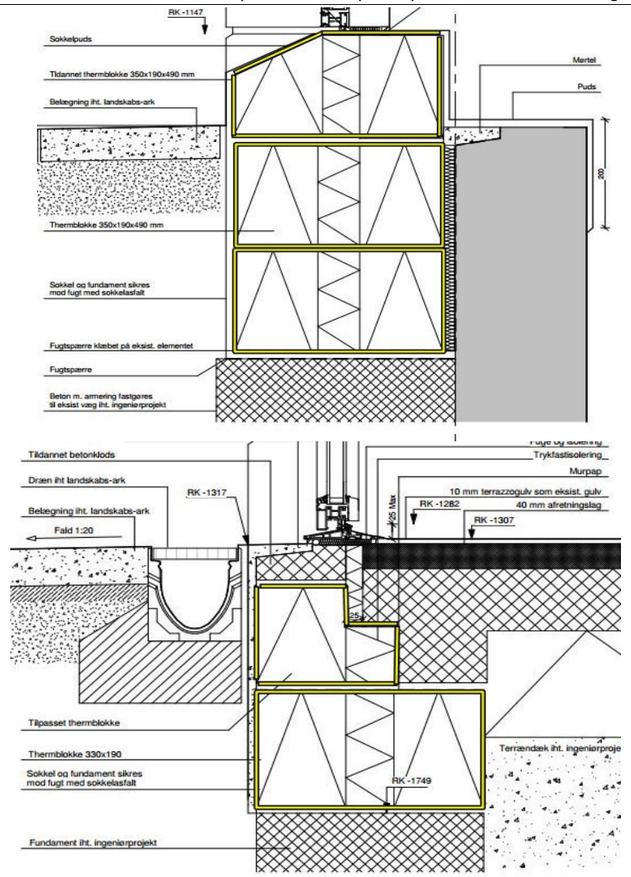
Calculation of quantities schedule							Company		Cofidis firm		
Case: Kolstrup Housing Association									Page	2	
Contract: 2.2 Masonry work	Waste	insulation	10%						Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%						Date	March 2015	
Drawing nr. A112, A212, A213, A602, A604, A606, A607	Waste	plaster	5%								
	Waste	membrane	2%								
	Pos. Nr	Area/ location		rm	m	Total m2					
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables											
	*2.2-4.1.1.2*	***Moisture bitumen barrier***									
		East gable									
		Area 16									
		Plinth A 606		0,56	1,80	1,01					
		Plinth A 607		0,57	12,00	6,78					
		South facade									
		Area 16									
		Plinth A 606		0,56	9,50	5,32					
		Plinth A 607		0,57	11,80	6,67					
		Area 14									
		Plinth A 606		0,56	12,20	6,83					
		Plinth A 607		0,57	8,80	4,97					
											
		Area 12									
		Plinth A 606		0,56	13,30	7,45					
		Plinth A 607		0,57	7,80	4,41					
		Area 10									
		Plinth A 606		0,56	10,90	6,10					
		Plinth A 607		0,57	10,60	5,99					
		West gable									
		Area 10									
		Plinth A 606		0,56	1,80	1,01					
		Plinth A 607		0,57	12,00	6,78					
		North facade									
		Area 10									
		Plinth A 602		1,19	20,30	24,06					
		Plinth A 604		0,33	2,50	0,81					
		Area 12									
		Plinth A 602		1,19	20,10	23,82					
		Plinth A 604		0,33	2,50	0,81					
		Area 14									
		Plinth A 602		1,19	20,10	23,82					
		Plinth A 604		0,33	2,50	0,81					
		Area 16									
		Plinth A 602		1,19	20,60	24,41					
		Plinth A 604		0,33	2,50	0,81					
Proces quantities/ methods											
	Quantities netto					162,67					
	Waste				2%	3,25					
	Quantities total					165,92					

Calculation of quantities schedule																				Company	Cofidis firm		
Case: Kolstrup Housing Association																					Page	3	
Contract: 2.2 Masonry work	Waste	insulation	10%																		Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%																		Date	March 2015	
Drawing nr. A112, A212, A213, A602, A604, A606, A607	Waste	plaster	5%																				
	Waste	membrane	2%																				
	Pos. Nr	Area/ location		height	rm	total m2	height	rm	total m2	height	rm	total m2	height	rm	total m2	height	rm	total m2				
					Hard insulation 25mm			Hard insulation 20mm			Hard insulation 180mm			Hard insulation 40mm			Soft insulation 20mm						
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables																							
	2.2-4.1.1.3	***Hard insulation***																					
		East gable																					
		Area 16																					
		Plinth A 606					0,175	1,80	0,32														
		Plinth A 607								0,2	12,00	2,4											
													0,19	12,00	2,28								
		South facade																					
		Area 16																					
		Plinth A 606					0,175	9,5	1,66														
		Plinth A 607								0,2	11,8	2,36											
													0,19	11,8	2,24								
		Area 14																					
		Plinth A 606					0,175	12,2	2,14														
		Plinth A 607								0,2	8,8	1,76											
													0,19	8,8	1,67								
		Area 12																					
		Plinth A 606					0,175	13,3	2,33														
		Plinth A 607								0,2	7,8	1,56											
													0,19	7,8	1,48								
		Area 10																					
		Plinth A 606					0,175	10,9	1,91														
		Plinth A 607								0,2	10,6	2,12											
													0,19	10,6	2,01								
		West gable																					
		Area 10																					
		Plinth A 606					0,175	1,80	0,32														
		Plinth A 607								0,2	12,00	2,4											
													0,19	12,00	2,28								
		North facade																					
		Area 10																					
		Plinth A 604	0,13	2,5	0,325																		
		Area 12																					
		Plinth A 604	0,13	2,5	0,325																		
		Area 14																					
		Plinth A 604	0,13	2,5	0,325																		
		Area 16																					
		Plinth A 604	0,13	2,5	0,325																		
	2.2-4.1.1.4	***Soft insulation***																					
		North facade																					
		Area 10																					
		Plinth A 602																	0,37	20,3	7,51		
		Area 12																					
		Plinth A 602																	0,37	20,1	7,44		
		Area 14																					
		Plinth A 602																	0,37	20,1	7,44		
		Area 16																					
Proces quantities/ methods		Plinth A 602																	0,37	20,6	7,62		
	Quantities netto				1,3			8,66			12,6				11,97						30,01		
	Waste			10%	0,13		10%	0,87		10%	1,26		10%		1,20		10%		3,00				
	Quantities total				1,43			9,53			13,86				13,17				33,01				
														Hard insul.	37,99			Soft insul.	33,01				



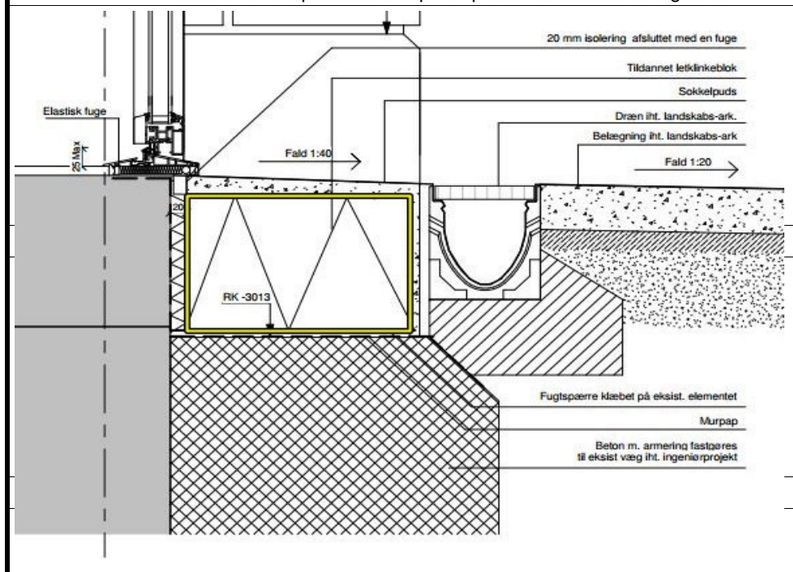




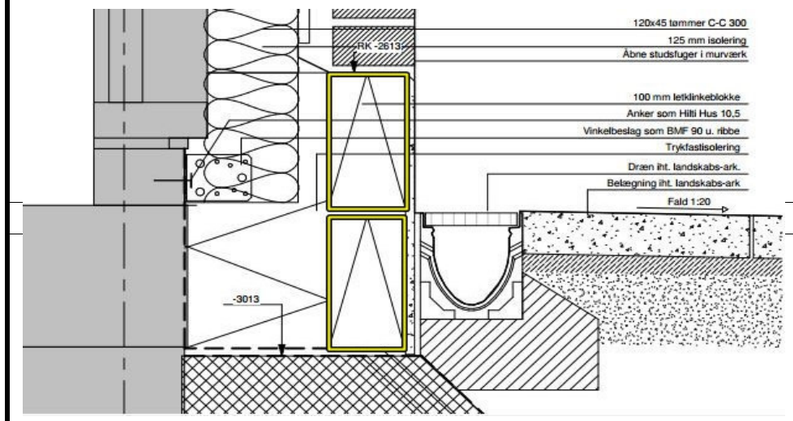
Calculation of quantities schedule											Company	Cofidis firm		
Case: Kolstrup Housing Association												Page	4	
Contract: 2.2 Masonry work	Waste	insulation	10%	Thermoblock 350x190x 490mm			Thermoblock 330x190mm					Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%									Date	March 2015	
Drawing nr. A112, A212, A602, A604	Waste	plaster	5%											
	Waste	membrane	2%											
	Pos. Nr	Area/ location		height	rm	total m2	height	rm	total m2					
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables														
	*2.2-4.1.1.5*	***Thermoblock 350x190x490mm***												
		North facade												
		Area 10												
		Plinth A 602		0,68	20,3	13,80								
		Area 12												
		Plinth A 602		0,68	20,1	13,67								
		Area 14												
		Plinth A 602		0,68	20,1	13,67								
		Area 16												
		Plinth A 602		0,68	20,6	14,01								
	2.2-4.1.1.6	***Thermoblock 330x190mm***												
		North facade												
		Area 10												
		Plinth A 604					0,35	2,5	0,875					
		Area 12												
		Plinth A 604					0,35	2,5	0,875					
		Area 14												
		Plinth A 604					0,35	2,5	0,875					
		Area 16												
		Plinth A 604					0,35	2,5	0,875					
Proces quantities/ methods														
	Quantities netto					55,15			3,5					
	Waste				5%	2,76		5%	0,18					
	Quantities total					57,91			3,68					

Calculation of quantities schedule							Company		Cofidis firm	
Case: Kolstrup Housing Association									Page	5
Contract: 2.2 Masonry work	Waste	insulation	10%						Name	Yolanda Calvo
Pos nr: 2.2-4.1 Facades	Waste	block	5%						Date	March 2015
Drawing nr. A112, A212, A213, A606, A607	Waste	plaster	5%							
	Waste	membrane	2%							

Cut thermoblock 265mm

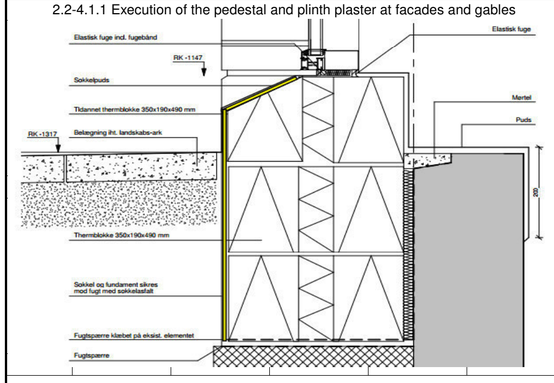
	Pos. Nr	Area/ location	height	rm	total m2
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables					
	*2.2-4.1.1.7*	***Cut thermoblock***			
		East gable			
		Area 16			
		Plinth A 606	0,35	1,8	0,63
		South facade			
		Area 16			
		Plinth A 606	0,35	9,5	3,33
		Area 14			
		Plinth A 606	0,35	12,2	4,27
		Area 12			
		Plinth A 606	0,35	13,3	4,66
		Area 10			
		Plinth A 606	0,35	10,9	3,82
		West gable			
		Area 10			
		Plinth A 606	0,35	1,8	0,63

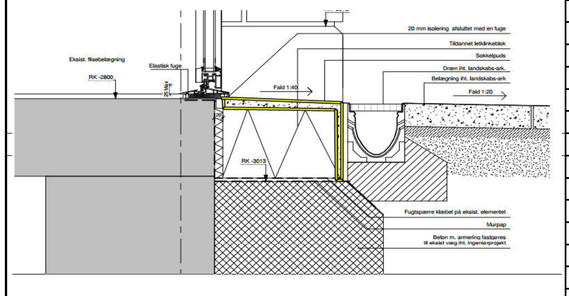
Proces quantities/ methods			
	Quantities netto		17,33
	Waste	5%	0,87
	Quantities total		18,19

Calculation of quantities schedule								Company	Cofidis firm	
Case: Kolstrup Housing Association								Page	6	
Contract: 2.2 Masonry work	Waste	insulation	10%					Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%					Date	March 2015	
Drawing nr. A112, A212, A213, A606, A607	Waste	plaster	5%							
	Waste	membrane	2%							
	Pos. Nr	Area/ location		height	rm	total m2				
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables										
	***2.2-4.1.1.8***	***Thermoblock 100mm***								
		East gable								
		Area 16								
		Plinth A 607		0,39	12	4,68				
		South facade								
		Area 16								
		Plinth A 607		0,39	11,8	4,60				
		Area 14								
		Plinth A 607		0,39	8,8	3,43				
		Area 12								
		Plinth A 607		0,39	7,8	3,04				
		Area 10								
		Plinth A 607		0,39	10,6	4,13				
		West gable								
		Area 10								
		Plinth A 607		0,39	12	4,68				
Proces quantities/ methods										
	Quantities netto					24,57				
	Waste				5%	1,23				
	Quantities total					25,80				
							105,57			

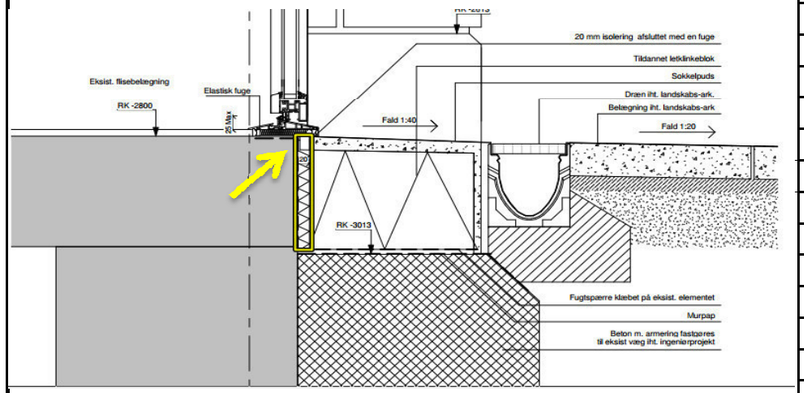
Calculation of quantities schedule															Company		Cofidis firm		
Case: Kolstrup Housing Association																	Page	7	
Contract: 2.2 Masonry work	Waste	insulation	10%														Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%														Date	March 2015	
Drawing nr. A112, A212, A213, A602, A604, A606, A607	Waste	plaster	5%																
	Waste	membrane	2%																
	Pos. Nr	Area/ location		rm	m	Total m2													

2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables





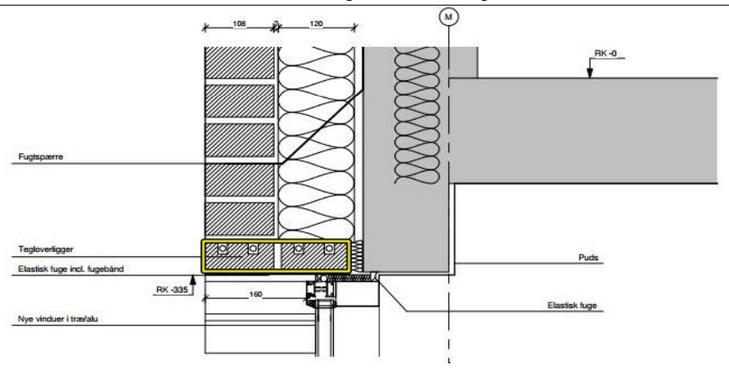
Calculation of quantities schedule							**Company**		Cofidis firm			
Case: Kolstrup Housing Association									**Page**	8		
Contract: 2.2 Masonry work	**Waste**	insulation	10%						**Name**	Yolanda Calvo		
Pos nr: 2.2-4.1 Facades	**Waste**	block	5%						**Date**	March 2015		
Drawing nr. A112, A212, A213, A606, A607	**Waste**	plaster	5%									
	Waste	membrane	2%									
	Pos. Nr	**Area/ location**		rm								
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables												
	2.2-4.1.1.10	***Joint***										
		East gable										
		Area 16										
		Plinth A 606		1,8								
		South facade										
		Area 16										
		Plinth A 606		9,5								
		Area 14										
		Plinth A 606		12,2								
		Area 12										
		Plinth A 606		13,3								
		Area 10										
		Plinth A 606		10,9								
		West gable										
		Area 10										
		Plinth A 606		1,8								
Proces quantities/ methods												
	Quantities netto			49,5								
	Waste			0,99	2%							
	Quantities total			50,49								



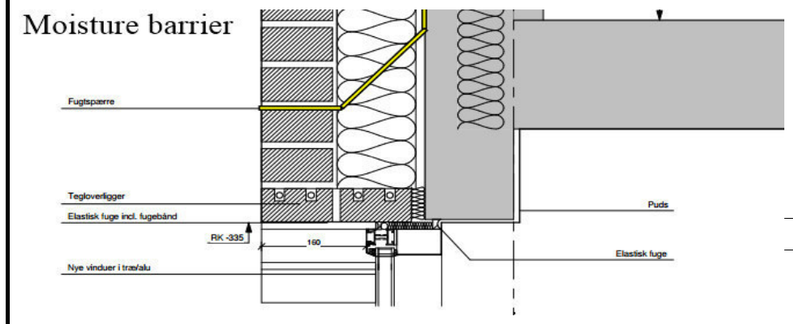
Calculation of quantities schedule										**Company**	Cofidis firm			
Case: Kolstrup Housing Association										**Page**	9			
Contract: 2.2 Masonry work	**Waste**	insulation	10%							**Name**	Yolanda Calvo			
Pos nr: 2.2-4.1 Facades	**Waste**	block	5%							**Date**	March 2015			
Drawing nr. A112, A212, A213, A602, A604, A606, A607	**Waste**	plaster	5%											
	Waste	membrane	2%											
	Pos. Nr	**Area/ location**						TOTAL						
2.2-4.1.1 Execution of the pedestal and plinth plaster at facades and gables														
	2.2-4.1.1.11	***Mortar***			61,58	18,19	25,80							
				5%	0,19	0,27	0,1							
					11,70	4,82	2,58	19,10						
								5%						
								0,96						
Proces quantities/ methods														
	Quantities netto													
	Waste													
	Quantities total			0,96										

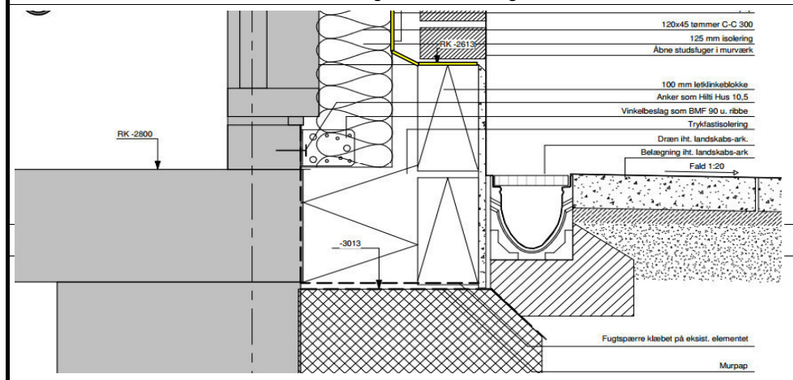
| Calculation of quantities schedule | | |

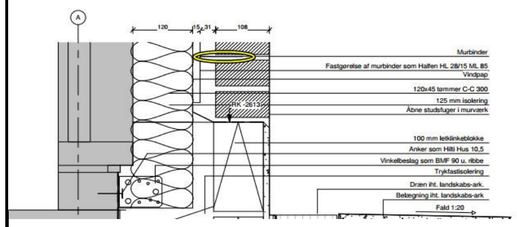
| | | |

Calculation of quantities schedule							Company		Cofidis firm		
Case: Kolstrup Housing Association									Page	12	
Contract: 2.2 Masonry work	Waste	insulation	10%						Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%						Date	March 2015	
Drawing nr. A112, A212, A213, A602, A604, A606, A607	Waste	plaster	5%								
	Waste	membrane	2%								
	Pos. Nr	Area/ location		width	rm	total m2					
2.2-4.1.2 Facings to walls and gables	2.2-4.1.2.3	***Lintols***									
		**East gable**									
		Area 16									
		Plinth A 606		0,22	1,8	0,40					
		North facade									
		Area 10									
		Plinth A 602		0,22	5,4	1,19					
		Area 12									
		Plinth A 602		0,22	4,8	1,06					
		Area 14									
		Plinth A 602		0,22	4,8	1,06					
		Area 16									
		Plinth A 602		0,22	4,8	1,06					
		West gable									
		Area 10									
		Plinth A 606		0,22	1,8	0,40					
		South facade									
		Area 16									
		Plint A 606		0,22	2,2	0,48					
		Area 14									
		Plint A 606		0,22	1,1	0,24					
		Area 12									
		Plint A 606		0,22	2,2	0,48					
		Area 10									
		Plint A 606		0,22	3,6	0,79					
Proces quantities/ methods											
	Quantities netto					7,15					
	Waste				5%	0,36					
	Quantities total					7,51					

Lintol 5,5cm

Calculation of quantities schedule							Company		Cofidis firm		
Case: Kolstrup Housing Association									Page	13	
Contract: 2.2 Masonry work	Waste	insulation	10%						Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%						Date	March 2015	
Drawing nr. A112, A212, A602, A604,	Waste	plaster	5%								
	Waste	membrane	2%								
	Pos. Nr	Area/ location		height	rm	total m2					
2.2-4.1.2 Facings to walls and gables											
	2.2-4.1.2.4	Moisture bituminen barrie									
		North facade									
		Area 10									
		Wall		10,265	1,8	18,48					
		Wall		1,965	11,5	22,60					
		Wall with hole		0,565	5,4	3,05					
		Area 12									
		Wall		1,965	13,7	26,92					
		Wall with hole		0,565	4,8	2,71					
		Area 14									
		Wall		1,965	13,7	26,92					
		Wall with hole		0,565	4,8	2,71					
		Area 16									
		Wall		10,265	1,8	18,48					
		Wall		1,965	12,4	24,37					
		Wall with hole		0,565	4,8	2,71					
Proces quantities/ methods											
	Quantities netto					148,95					
	Waste				2%	2,98					
	Quantities total					151,92					

Calculation of quantities schedule							Company		Cofidis firm		
Case: Kolstrup Housing Association									Page	14	
Contract: 2.2 Masonry work	Waste	insulation	10%						Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%						Date	March 2015	
Drawing nr. A112, A212, A213, A606, A607	Waste	plaster	5%								
	Waste	membrane	2%								
	Pos. Nr	Area/ location		height	rm	total m2					
2.2-4.1.2 Facings to walls and gables	***2.2-4.1.2.5***	***Wind barrier***									
		**East gable**									
		Area 16									
			Wall	11,7	12,1	141,57					
			Wall with hole	9,6	1,8	17,28					
		South facade									
		Area 16									
			Wall	11,45	0,65	7,44					
			Wall	2,4	11,15	26,76					
			Wall with hole	0,25	2,2	0,55					
		Area 14									
			Wall	2,4	12,3	29,52					
			Wall with hole	0,25	1,1	0,28					
		Area 12									
			Wall	2,4	7,8	18,72					
			Wall with hole	0,25	2,2	0,55					
		Area 10									
			Wall	11,45	0,65	7,44					
			Wall	2,4	9,95	23,88					
			Wall with hole	0,25	1,1	0,28					
			Wall with hole	0,35	2,5	0,88					
		West gable									
		Area 10									
			Wall	10,95	12,1	132,50					
			Wall with hole	8,85	1,8	15,93					
Proces quantities/ methods											
	Quantities netto					423,57					
	Waste				2%	8,47					
	Quantities total					432,04					

Calculation of quantities schedule																					Company	Cofidis firm		
Case: Kolstrup Housing Association																						Page	15	
Contract: 2.2 Masonry work	Waste	insulation	10%																			Name	Yolanda Calvo	
Pos nr: 2.2-4.1 Facades	Waste	block	5%																			Date	March 2015	
Drawing nr. A112, A212, A213, A602, A604, A606, A607	Waste	plaster	5%																					
	Waste	membrane	2%																					
	Pos. Nr	Area/ location		Total m2	total ud	rm	total ud	rm	total ud	rm	total ud	rm	total ud	rm	total ud	rm	total ud	rm	total ud				
2.2-4.1.2 Facings to walls and gables				Facade 8ud/m2		Simple door facade 1ud/0,3m		Simple door gable 1ud/0,3m		Main door North facade 1ud/0,3m		Main door South facade 1ud/0,3m		garage door 1ud/0,3m		curtain wall 1ud/0,3m		Simple window 1ud/0,3m					
	2.2-4.1.2.6	*Anchors*																						
		West gable																						
		Area 16		150,58	502			9,4	32															
		South facade																						
		Area 16		35,21	118	9,8	33					4,8	16			2,4	8							
		Area 14		21,67	73	4,9	17					4,8	16			4,8	16							
		Area 12		19,82	67	9,8	33					4,8	16			4,8	16							
		Area 10		32,65	109	4,9	17					4,8	16	6,1	21	2,4	8							
		East gable																						
		Area 10		157,58	526			9,4	32															
		North facade																						
		Area 10		48,02	161					4,2	14							25,2	84					
		Area 12		33,16	111					4,2	14							22,4	75					
		Area 14		33,16	111					4,2	14							22,4	75					
		Area 16		49,1	164					4,2	14							22,4	75					
Proces quantities/ methods																								
	Quantities netto			1942		100		64		56		64		21		48		308						
	Quantities total																			2603				

Calculation of quantities schedule								**Company**		Cofidis firm			
Case: Kolstrup Housing Association										**Page**	16		
Contract: 2.2 Masonry work	**Waste**	insulation	10%							**Name**	Yolanda Calvo		
Pos nr: 2.2-4.1 Facades	**Waste**	block	5%							**Date**	March 2015		
Drawing nr. A112, A212, A213, A602, A604, A606, A607	**Waste**	plaster	5%										
	Waste	membrane	2%										
	Pos. Nr	**Area/ location**											
2.2-4.1.2 Facings to walls and gables													
	2.2-4.1.2.4	***Mortar***		67,08									
				5%									
				3,35									

4.2.1.2. Summary

Case: Kolstrup Housing Association 2.2 Masonry — Company: — Page: 1/1 — Name: Yolanda Calvo — Date: March 2015

Summary up schedule		Subject		Pos.											
Subjects	page1	page2	page3	page 4,5	page 7	page 8	page 9	page10	page 11	page 11	page 11	page 11	page 14	page 11	Total	Unit
Bituminen paint	48,15														48	m2
Moisture bituminen pain		165,9									151,9				318	m2
Hard insulation			37,99												38	m2
Soft insulation			33,01												33	m2
Thermoblock				105,57											106	m2
Plaster					173,9										174	m2
Joint						50,49									50	rm
Mortar							0,96							3,35	4	m3
Insulation								650,7							651	m2
Walltiles									621,1						621	m2
Lintols										7,51					8	m2
Wind barrier													432		432	m2
Anchor												2603			2603	pcs
															0	
															0	
															0	
															0	
															0	
															0	

4.2.1.3. Manhours

Calculation of manhours					2.2 Masonry			
Pos.:	2.2-4.1			Name	Yolanda Calvo			
				Date	March 2015			
				Case	Kolstrup			
		Activit	Bitumen paint	Reference:		Performance da		
Calc. Quant.:	48,2	m2						
Guiding time:							0,20	mh/m2
					add./red.			
			Add. Small quant.		12%		0,02	
				Total			0,22	
conditions:			Difficulty of the wor		0%		0,00	
			Volume	OK	0%		0,00	
			Weather / se	Winter	10%		0,02	
			distance	0	0%		0,00	
			Other	Yes	5%		0,01	
				Total			0,26	
Workrelated allowance:								
			Scaffolding	Yes	12%		0,03	
			Other	No	0%		0,00	
			Total				0,28	

Calculation of manhours						2.2 Masonry			
Pos.:	2-4.1 / 2.2-4.2				Name	Yolanda Calvo			
					Date	March 2015			
					Case	Kolstrup			
		Activit	Moisture bitumen		Reference:		performance da		
Calc. Quant.:		318	m2						
Guiding time:								0,20	mh/m2
						add./red.			
			Add. Small quant.			12%		0,02	
					Total			0,22	
conditions:			Difficulty of the wor			0%		0,00	
			Volume		OK	0%		0,00	
			Weather / se		Winter	10%		0,02	
			distance		0	0%		0,00	
			Other		Yes	5%		0,01	
					Total			0,26	
Workrelated allowance:									
			Scaffolding		Yes	12%		0,03	
			Other		No	0%		0,00	
			Total					0,28	

Calculation of manhours						2.2 Masonry			
Pos.:	2-4.1 / 2.2-4.2				Name	Yolanda Calvo			
					Date	March 2015			
					Case	Kolstrup			
		Activit	Insulation		Reference:		Performance da		
Calc. Quant.:		722	m2						
Guiding time:								0,07	mh/m2
						add./red.			
			Add. Small quant.			10%		0,01	
					Total			0,08	
conditions:			Difficulty of the wor			10%		0,01	
			Volume		OK	10%		0,01	
			Weather / se		Winter	10%		0,01	
			distance		0	0%		0,00	
			Other		Yes	3%		0,00	
					Total			0,10	
Workrelated allowance:									
			Scaffolding		Yes	12%		0,01	
			Other		No	0%		0,00	
			Total					0,11	

Calculation of manhours						2.2 Masonry			
Pos.:		2.2-4.1			Name	Yolanda Calvo			
					Date	March 2015			
					Case	Kolstrup			
		Activit	Thermoblock		Reference:		Performance da		
Calc. Quant.:		106	m2						
Guiding time:								0,40	mh/m2
						add./red.			
			Add. Small quant.			28%		0,11	
					Total			0,51	
conditions:			Difficulty of the wor			5%		0,03	
			Volume		OK	0%		0,00	
			Weather / se		Winter	10%		0,05	
			distance		0	0%		0,00	
			Other		Cut	30%		0,15	
					Total			0,74	
Workrelated allowance:									
			Scaffolding		No	0%		0,00	
			Other		No	0%		0,00	
			Total					0,74	

Calculation of manhours					2.2 Masonry			
Pos.:		2.2-4.1		Name	Yolanda Calvo			
				Date	March 2015			
				Case	Kolstrup			
		Activit	Plaster	Reference:		Performance da		
Calc. Quant.:		174						
Guiding time:							0,74	
					add./red.			
			Add. Small quant.		11%		0,08	
				Total			0,82	
conditions:			Difficulty of the wor		5%		0,04	
			Volume	OK	0%		0,00	
			Weather / se	Winter	10%		0,08	
			distance	0	0%		0,00	
			Other	No	0%		0,00	
				Total			0,94	
Workrelated allowance:								
			Scaffolding	No	0%		0,00	
			Other	No	0%		0,00	
			Total				0,94	

Calculation of manhours						2.2 Masonry			
Pos.:	2.2-4.1 / 2.2-4				Name	Yolanda Calvo			
					Date	March 2015			
					Case	Kolstrup			
		Activit	Mortar		Reference:		Performance da		
Calc. Quant.:		4,31							
Guiding time:								0,04	
						add./red.			
			Add. Small quant.			28%		0,01	
					Total			0,05	
conditions:			Difficulty of the wor			5%		0,00	
			Volume		OK	0%		0,00	
			Weather / se		Winter	10%		0,01	
			distance		0	0%		0,00	
			Other		No	0%		0,00	
					Total			0,06	
Workrelated allowance:									
			Scaffolding		No	0%		0,00	
			Other		No	0%		0,00	
			Total					0,06	

Calculation of manhours					2.2 Masonry			
Pos.:		2.2-4.1		Name	Yolanda Calvo			
				Date	March 2015			
				Case	Kolstrup			
		Activit	Joint	Reference:		Performance da		
Calc. Quant.:		50,5	rm					
Guiding time:							0,35	mh/rm
					add./red.			
			Add. Small quant.		10%		0,04	
				Total			0,39	
conditions:			Difficulty of the wor		0%		0,00	
			Volume	OK	0%		0,00	
			Weather / se	Winter	10%		0,04	
			distance	0	0%		0,00	
			Other	No	0%		0,00	
				Total			0,42	
Workrelated allowance:								
			Scaffolding	No	12%		0,05	
			Other	No	0%		0,00	
			Total				0,47	

Calculation of manhours					2.2 Masonry			
Pos.:		2.2-4.2		Name	Yolanda Calvo			
				Date	March 2015			
				Case	Kolstrup			
		Activit	Walltiles	Reference:		Performance da		
Calc. Quant.:		621						
Guiding time:							0,55	
					add./red.			
			Add. Small quant.		10%		0,06	
				Total			0,61	
conditions:			Difficulty of the wor		20%		0,12	
			Volume	OK	0%		0,00	
			Weather / se	Winter	10%		0,06	
			distance	0	0%		0,00	
			Other	No	0%		0,00	
				Total			0,79	
Workrelated allowance:								
			Scaffolding	No	30%		0,18	
			Other	No	0%		0,00	
			Total				0,97	

Calculation of manhours					2.2 Masonry			
Pos.:		2.2-4.2		Name	Yolanda Calvo			
				Date	March 2015			
				Case	Kolstrup			
		Activit	Lintols	Reference:		Performance da		
Calc. Quant.:		7,51						
Guiding time:							0,07	
					add./red.			
			Add. Small quant.		10%		0,01	
				Total			0,08	
conditions:			Difficulty of the wor		10%		0,01	
			Volume	OK	0%		0,00	
			Weather / se	Winter	10%		0,01	
			distance	0	0%		0,00	
			Other	No	0%		0,00	
				Total			0,09	
Workrelated allowance:								
			Scaffolding	No	10%		0,01	
			Other	No	0%		0,00	
			Total				0,10	

Calculation of manhours					2.2 Masonry			
Pos.:		2.2-4.2		Name	Yolanda Calvo			
				Date	March 2015			
				Case	Kolstrup			
		Activit	Wind barrier	Reference:				
Calc. Quant.:		432						
Guiding time:							0,20	
					add./red.			
			Add. Small quant.		12%		0,02	
				Total			0,22	
conditions:			Difficulty of the wor		10%		0,02	
			Volume	OK	0%		0,00	
			Weather / se	Winter	10%		0,02	
			distance	0	0%		0,00	
			Other	No	0%		0,00	
				Total			0,27	
Workrelated allowance:								
			Scaffolding	No	20%		0,04	
			Other	No	0%		0,00	
			Total				0,31	

Calculation of manhours						2.2 Masonry			
Pos.:		2.2-4.2			Name	Yolanda Calvo			
					Date	March 2015			
					Case	Kolstrup			
		Activit	Anchors		Reference:		Performance da		
Calc. Quant.:		2603	pcs						
Guiding time:		20pcs/						3,20	mmin/ mpcs
						add./red.			
			Add. Small quant.			10%		0,32	
					Total			3,52	
conditions:			Difficulty of the wor			20%		0,70	
			Volume		OK	0%		0,00	
			Weather / se		Winter	10%		0,35	
			distance		0	0%		0,00	
			Other		No	0%		0,00	
					Total			4,58	
Workrelated allowance:									
			Scaffolding		No	12%		0,42	
			Other		No	0%		0,00	
			Total					5,00	

Calculation of manhours						2.2 Masonry			
Pos.:					**Name**	**Yolanda Calvo**			
					Date	**March 2015**			
					Case	**Kolstrup**			
		Activit			**Reference:**				
Calc. Quant.:									
Guiding time:								**0,00**	
						add./red.			
			Add. Small quant.			**0%**		**0,00**	
					Total			**0,00**	
conditions:			**Difficulty of the wor**			**0%**		**0,00**	
			Volume		OK	**0%**		**0,00**	
			Weather / se		Winter	**0%**		**0,00**	
			distance		0	**0%**		**0,00**	
			Other		No	**0%**		**0,00**	
					Total			**0,00**	
Workrelated allowance:									
			Scaffolding		No	**0%**		**0,00**	
			Other		No	**0%**		**0,00**	
			Total					**0,00**	

4.2.1.4. Calculation price

Summary pa Calculation Case: Kolstrup Page:1
Frontpage Masonry work Date March 2015 Name Yolanda Calvo

	Ownproduction			Wages					MAT		Machines			Grossprice	
POS NR.	Activity	Unit	Quantity	Minuts pr. unit	Hours total	Wages Total kr.	Daywage 10%	SOC. 44%	Unit price	Materials	Unit price	Materials rent/ run	Netto price	Factor	Gross price
2.2.-4.1	**Execution of the plinth plaster**				0	0	0,00	0,00		0		0	0	1,22	0
	Bitumien paint	m2	48,15	16,80	13	2.427	242,68	1.174,55	9,36	451		0	4.295	1,22	5.237
	Molsture bitumen barrier	m2	165,92	16,80	46	8.362	836,24	4.047,39	9,36	1.553		0	14.799	1,22	18.048
	Hard insulation	m2	37,99	6,60	4	752	75,22	364,07	21,37	812		0	2.003	1,22	2.443
	Soft insulation	m2	33,01	6,60	4	654	65,36	316,34	21,37	705		0	1.741	1,22	2.123
	Thermoblocks	m2	105,57	44,40	78	14.062	1.406,19	6.805,97	16,26	1.717		0	23.991	1,22	29.257
	Plaster	m2	173,88	56,40	163	29.420	2.942,05	14.239,52	8,00	1.391		0	47.993	1,22	58.528
	Joint	rm	50,49	28,20	24	4.271	427,15	2.067,38	27,00	1.363		0	8.129	1,22	9.914
	Mortar	m3	0,96	3,60	0	10	1,04	5,02	533,55	512		0	529	1,22	645
					0	0	0,00	0,00		0		0	0	1,22	0

Calculation: Masonry work — Page 2

Ownproduction — Date: March 2015 — Name: Yolanda Calvo

POS NR.	Activity	Unit	Quantity	Minuts pr. unit	Hours total	Wages Total kr.	Daywage 10%	SOC. 0%	Unit price	MAT Materials	Unit price	Machines Materials rent/ run	Netto price	Factor	Gross price	Grossprice
2.2-4.2	**Bricking outer leaf of facades and gables**				0	0	0,00	0,00		0		0	0	1,22		0
	Insulation	m2	650,67	6,60	72	12.883	1.288,33	6.235,50	21,37	13.905		0	34.312	1,22		41.844
	Wallties	m2	621,09	58,20	602	108.442	10.844,23	52.486,08	56,25	34.936		0	206.709	1,22		252.084
	Lintols	m2	7,51	6,00	1	135	13,52	65,43	56,25	422		0	637	1,22		776
	Moisture bitumen barrier	m2	151,92	16,80	43	7.657	765,68	3.705,88	9,36	1.422		0	13.550	1,22		16.525
	Wind barrier	m2	432,04	18,60	134	24.108	2.410,78	11.668,19	9,36	4.044		0	42.231	1,22		51.501
	Anchor	pcs	2.603,00	5,00	217	39.045	3.904,50	18.897,78	20,00	52.060		0	113.907	1,22		138.911
	Mortar	m3	3,35	3,60	0	36	3,62	17,51	533,55	1.787		0	1.845	1,22		2.250
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
					0	0	0,00	0,00		0		0	0	1,22		0
Total to summary up					1.068	192.307	19.230,65	93.076,37		108.577		0	413.190			503.891

	Calculation	**Case**	**Namn**		**Page**
	Frontpage!				
	Masonry works			**Name**	**Grossprice**
Trin:		**Costs**			

Example taken from the book A T 2 page 385

Variabel costs			516670	
Rig/ unrig site			0	
Running site			0	excl driving money
Variabel costs total			**516670**	
Contribution margin				
CM own p.	18,00%	Key your own CM from own. Pr.	**630085**	Price is excl winter and stipulated benefits
Fix the riscs if there are any.			0	Key in the total in thousand kr.
Capacati costs in relation to the budget				
Administration costs		9,0%	56708	
Financing		1,0%	6301	
The margin after paying the capasity costs			567077	0
Gross ownproduction			630085	
Conversionfactor			516670	1,22
Social costs	44%	Key in your own costs from the calculation ef the salarycalculation		
Wage factor	180 kr			

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Calculation Case: **Namn** Frontpage

Masonry works

Date

Name

		Wages						Materials		Machines			
		Hours total	Wages Total	Unex. kr	Unex. hours	SOC. 44%		Materials		Machines rent	Netto price	CM kr	Gross price
Masonry works		1.401	252.266	25.227	168	122.097		117.081		0	516.670	113.415	630.085
												0	
Rig/ unrig site		0	0	0	0	0		0		0	0	0	0
												0	
Running site		0	0	0	0	0				0	0	0	0
	Total	1.401	252.266	25.227	168	122.097		0	117.081	0	516.670	113.415	630.085
Driving money	240,00	Key in your own amount									50.908	11.175	62.083
										Total	567.577	124.590	692.168
	Months	Monthly unitprice											
contract manager	0,00	50.000									0		0
Foreman	4,00	40.000									160.000		160.000
Winterbidding list													0
Riscs													0
Stipulated payments													0
							Productionprice exl manegment and stipulated payments				567.577		
							Productionprice incl. manegment and stipulated payments				727.577	124.590	
											Price excl winter and sti. Pay.		692.168
											Price incl. winter and sti. Pay.		852.168
											Cm demolition works		18,00

4.2.2. Legal scrutiny

4.2.2.1. Contractors checklist (for received tender material)

The checklist can be used for the first scrutiny of the received material, but also for the more detailed scrutiny during the bidding phase.

The completed checklist can be a good help in the preparation for a pre-tender meeting, or by a later handing over the project to a colleague.

The checklist is elaborated

by BYG Cph.. and rev.

july 2002/nst

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

1. Overview of the received material (letter of tender)

				Remarks/ references
1.1	Client:	Kolstrup Housing Association Section 16 v / Salus Housing Administration A.m.b.a Vestergade 12 6200 Aabenraa		**BCS pag.7**
1.2	Awarding entity:	Cofidis Firm		
1.3	Building case:	Kolstrup Building		
1.4	Trade form:	Ind. Trade form.:	Subcontractor.: X	Main contractor.:
1.5 bid:	Tender form:	Public:	Selected:	confidential
	Client covered by tenderact **Private client**		X	
1.6	Tender time:	Date: 24.03 201 5	Time: 10:15	Invitation to maincontractor
1.7	Place for tender /adress:	VIA University College Chr M Østergaards Vej 4, 8700 Horsens F.106		Invitation to maincontractor
1.8	Are any documents, (drawings, pages in specification etc.) missing? Which:			
1.9	Closing time for questions regarding the tender material.	Date: 17.03 201 5		Invitation to maincontractor
1.10	Closing time for revisions.	Date: 20.0 2015 3.		Invitation to maincontractor

The list is gone through by: Yolanda Calvo Date: March 2015

1.11	Other specific conditions mentioned in the tender letter for the building case:	Lowest price	

The list is gone through by: Yolanda Calvo Date: March 2015

2. Overview of the building case:

			Remarks/reference Drawing no. Specification pos..
2.1	Short description of the building case:	The project covers 2 blocks currently 84 dwellings which will be converted into 66 dwellings. Work includes renovation of the climate screen containing additional insulation and wall cladding of parterre level and gables with new facing wall, additional insulation and zinc cladding of parapets. Replacement of window elements with new and larger window elements and blinds, including partial removal of existing concrete element facades. Expansion / construction of new stairways and establishment of a lift. Construction of new roof with overhang like hot roof with roofing felt on top of existing roof bitumen. Existing patios are converted to open balconies wi th insulation of decks and walls against dwellings. Dwellings are joined and therefore demolition and construction of new wal ls, doors, bathrooms, kitchens, floors and repainting is needed. In general new technical installations are installed. Outdoor areas, re-establishment of tiled areas and establishment of level free access with ramps to entrance doors. New playground areas and new planting.	**BCS pag.5**
2.1.1	and volume	6 300 m^2 total floor area	**BCS pag.5**
2.2	Location of the building site:	Uglekaer 2-8, 10-16 6200 Aabenraa, South Jutland Denmark	**BCS pag.8**

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

Who is responsible for:

2.3.	Administration of the building case:		**BCS pag.21**
2.4	Site management:	Main contractor (Cofidis firm)	**BCS pag.21**
2.5	Trade supervision in the building case:	NOVA5/H & H / T & W	**BCS pag.21**

Time schedule for the construction project:

2.6	Expected start of the construction case:	Date: 01.10.2015	Invitation to maincontractor
2.7	Expected handover of the construction case:	Date: 01.10.2016	Invitation to maincontractor
2.8	Expected start of **this trade**:	Date:	
2.9	Expected handover of **this trade**:	Date:	
2.10	**Execution during wintertime:**	Yes: X No:	Invitation to maincontractor

Autor: Yolanda Calvo Mateo
Nº TFG: 422.13.194

The list is gone through by: Yolanda Calvo Date: March 2015

3. Common conditions and Special conditions:

						Remarks/reference Drawing no. Specification pos..
	Pay specific attention to additions and deviations to GC 92 and "normal practice"!					
3.1	**The projectmaterial;** -is it stated, that the contractor have to read through the complete material **(NB! GC 92 § 2 is in force)** (be aware of work, which is not clearly drawn up, specified or eventually refered to in another trade)	Yes:		No:		
3.2	Are alternative bid desirable:	Yes:		No:		
3.3	Are the standardreservations rekognized, e.g. Dansk Bygggeri's as a part of the bid?	Yes:		No:		
3.4	Does the client reserve his position to have a free choice amongst the received bids:	Yes:		No:		
3.5	Binding time of bid:			No. of weeks:		
3.6	**Price and time (fixed):**	Yes:		No:		
3.6.1	Are there deviations from price and time cirkular of 10 oct. 1991, Incl. a.o. fixed price (max in 12 mth.)	Yes:		No:		
3.6.2	**Which deviations?**					
3.7	**Contractors security bond**	%	Date for release:_____			
3.8	**Is it a** demand guarantee**?**	Yes:		No:		
3.9	**Does the client provide security?**	Yes:		No:		

The list is gone through by: Yolanda Calvo Date: March 2015

3.10	**Form of payment:**		Phaseplan:			
3.10.1			Interim certificate:			

3. Common conditions and Special conditions - continued:

						Remarks/reference Drawing no. Specification pos..
3.11	**Payment; -** are conditions for payment of the contractsum specified?	Yes:		No:		
3.12	**Payment; -** are rules for payment of extra work and omissions specified?	Yes:		No:		
3.13	Are demarcations for projectdeviations set, acc. to GC 92 § 14	Yes:		No:		
3.13.1	What demarcations?					
3.14	**Hand over; -** are there specific conditions for handing over the trade?	Yes:		No:		
3.15 A	**Withhold;** 15 % security, 0% withhold? GC 92 legislation.	Yes:		No:		
3.15 B	**Withhold;** 10 % security, 5 % withhold - not part of GC 92	Yes:		No:		
3.16	**Release of security bond; -** are there specific conditions for release of eventually **security bond?**	Yes:		No:		
3.17	**Sanctions;**					
3.17.1	Day fine (per. calendarday or workday	1 000	Kr. per. day:			**BCS Pag.26 Section 9**
3.18	Are there a description of the rules for calculation of and release of day fines?	Yes:		No:		

Autor: Yolanda Calvo Mateo
Nº TFG: 422.13.194

The list is gone through by: Yolanda Calvo Date: March 2015

3.19	**Waste days estimation; -** are there descriptions of how to estimate waste days and/or what kind of situations could give wastedays? (including definition of bad weather)	Yes:		No:		
3.20	**Formal demands regarding respite acc. to AB 92 § 24**	Yes:		No:		
3.21	**Time limits regarding compensation from contractor to client acc. to** GC 92 § 27	Yes:		No:		
3.22	**Is GC 92 § 35 stk 2 deviated.**	Yes:		No:		
3.23	**Is the 5 years guarantee acc. to GC 92 deviated? (not recommended.)**	Yes:		No:		
3.24	**Is demand regarding 5 years suppliers Guarantee deviated? (should follow contractors guarantee)**	Yes:		No:		
3.25	Are there demand for specific Insurances.	Yes:		No:		
3.25.1	Which?					
3.26.1	**Does the client have all-risk insurance?**	Yes:		No:		
3.26.2	**Own risk?, if yes, how much?**	Yes:		No:		
3.27	Has the client taken a policy for storm and fire?	Yes:		No:		
3,27.1	are the contractor included?	Yes:		No:		
3.28	**Meetings:** -are there demands for participation in meetings beyond the usual site meetings?	Yes:		No:		

Autor: Yolanda Calvo Mateo
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The list is gone through by: Yolanda Calvo Date: March 2015

3.29.1	Are there time limits for objections to minutes acc. to GC 92 § 19	Yes:		No:		

Is it marked clearly, who is responsible for:

3.30	-the common buildingsitearrangement maintenance/cleaning of common areas.	Yes:		No:		
3.31	-Who will pay for usage of electricity, Telephone and water?	Yes:		No:		
3.32	-weatherprovisions in common areas	Yes:		No:		
3.33	- securityprovisions in common areas	Yes:		No:		

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

5. Overview of the trade:

						Remarks/reference drawing no. Specification pos..
5.1	**Extent of the trade: -** do the drawinglist contain a clear indication of the drawings, attached to the trade?	Yes:	X	No:		Drawinglist
5.2	Is it evident which constructionworks is included in the trade?	Yes:	X	No:		Main trade
5.3	**Worksiteplanning;** - are there a clear specification of the demands for the contractors workplanning, including detailing and demands for updating?	Yes:	X	No:		Main trade
5.4	**Supervision:** - are particular conditions for supervision stated from:					
5.4.1	Authorities?	Yes:		No:	X	
5.4.2	Client?	Yes:	X	No:		7.1 BCSF
5.4.3	Contractor?	Yes:	X	No:		7.1 BCSF
5.5	Specific remarks:	Client will supervise the construction. Where supervisory control provides reasonable ground for suspending that the requirements for a building is not met, the contractor will be required to demont that the recrirements are met.				

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

6. Quality Assurance:

						Remarks/reference Drawing no. Specification pos..
6.1	Quality Assurance: - are there demand for Quality assurance cf. departmental order no. 1179 of 4.10.2013?	Yes:		No:	X	7 BCSF
6.2	Are participation in projectscrutinity-meeting(s) requested?	Yes:		No:		
6.3	Are a controlplan included in the projectmaterial?	Yes:	x	No:		7.3.1 BCSF
6.4	Are there special demands for delivery control?	Yes:		No:		
6.4.1	What special demands?					
6.5	Are there special demands for process control?	Yes:	x	No:		7.3.1 BCSF
6.5.1	What special demands?	List of contents. Nichname, organization and responsability. Document management.				
6.6	Are special tests needed?	Yes:		No:		
6.6.1	What special tests?					
6.7	Are there demand for Q.A.-documentation?	Yes:	X	No:		7.2 BCSF
6.7.1	What special demands?	Organization for the trade. Document management. Process scrutiny.				
6.8	Are information regarding individual materials and building components certificates, guaranties and Operation and Maintenance requested?	Yes:	X	No:		7.3.3 BCSF

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

6.8.1	What materials and building components?		

Autor: Yolanda Calvo Mateo
Nº TFG: 422.13.194

The list is gone through by: Yolanda Calvo Date: March 2015

7. Overview of the work of the individual profession:

7.1 Extent:

The best way to determine the extent is done by measuring and pricing of the individual building components (partworks /activities)

Other works in the form of : e.g. - test of materials
- design
- arrangement of building site
- operation of building site
- weatherprecautions
- safetyprecautions
- quality-management

Are determined during the bidding phase as well.

7.2 Directions:

					Remarks/reference Drawing no. Specification pos..
7.2.1	**-are there references to norms and technical provisions, which have to be followed?**	Yes:	X	No:	
7.2.2	Which norms and technical provisions?	Registration protocol -> extent and quality of the week performed. Wearing schedule. Measurements.			
7.2.3	**-is it stated which certificates, declarations etc. are requested?**	Yes:	X	No:	
7.2.4	Which certificates and declarations?	Tender control plan, participants in project conferome, foenisting of documentation, rest form part of the service.			**P. 4 a 6**
7.2.5	**-are preconditions for execution of the work stated, like tolerances at previous work/trade**	Yes:	X	No:	

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

7.2.6 Which tolerances?	Planning paenssion. Licence. Certificates Execution wrok. Request inspections.	**4.4**

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Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

8. Considerations: -should bid be given respecting Conditions in tender material?

					Remarks/reference Drawing no. Specification pos..
8.1	-are there conditions and requirements stated in: **"1. Overview of recieved material (letter of tender) "** which cannot be accepted?	Yes:		No:	X	
8.1.1	Which conditions or requirements cannot be accepted **(state pos. and remarks)**					
8.2	-are there conditions and requirements stated in **"2. Overview of the building case:"** which cannot be accepted?	Yes:	X	No:		
8.2.1	Which conditions or requirements cannot be accepted **(state pos. and remarks)**		Not damaged the public area (road, trees, wires...)			**4.4**
8.3	- are there conditions and requirements stated in **"3. Common conditions and specific conditions:"** which cannot be accepted?	Yes:		No:	X	
8.3.1	Which conditions or requirements cannot be accepted **(state pos. and remarks)**					
8.4	- are there conditions and requirements stated in **"4. Are there particular specifications on the tenderform:"** which cannot be accepted?	Yes:	X	No:		

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

8.4.1	Which conditions or requirements cannot be accepted **(state pos. and remarks)**	The MC shall regester by photo. The building components included in the work or adgaining the work before stert of the work to register possible damages before steet of the work.	**4.4**

Autor: Yolanda Calvo Mateo
Nº TFG: 422.13.194

The list is gone through by: Yolanda Calvo Date: March 2015

8. Considerations: -should bid be given respecting Conditions in tender material? - continued

					Remarks/reference Drawing no. Specification pos..
8.5	- are there conditions and requirements stated in "**5. Overview of the trade:"** which cannot be accepted?	Yes:		No:	X	
8.5.1	Which conditions or requirements cannot be accepted **(state pos. and remarks)**					
8.6	- are there conditions and requirements stated in "**6. Quality-assurance; "** which cannot be accepted?	Yes:		No:	X	
8.6.1	Which conditions or requirements cannot be accepted **(state pos. and remarks)**					
8.7	- are there conditions and requirements stated in "**7. Overview of work for the individual trade:"** which cannot be accepted?	Yes:		No:	X	
8.7.1	Which conditions or requirements cannot be accepted **(state pos. and remarks)**					

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

9. Should bid be given ?

					Remarks/reference Drawing no. Specification pos..
9.1	**Are reservations needed against some of the conditions, stated in the tender material**	Yes:	X	No:	
9.2	Which reservations are needed **(refer to which pos. no the reservation is taken)**	The alternative material/ selvitors are equal/better than the required quality specified in the TM.			
9.3	**-are there other conditions and works where special attention is needed?**	Yes:		No:	X
9.4	Which reservations are needed **(refer to which pos. no the reservation is taken)**				
9.5	**Are we giving a bid on above mentioned requirements, incl. the stated reservations?**	Yes:		No:	X
9.6	**Are we deviating from above mentioned reservations, if we are invited to negotiate after the tender?**	Yes:	X	No:	
9.7	**<u>Which reservations are completely unchangeable?</u>**				

Autor: Yolanda Calvo Mateo
Nº TFG: 422.13.194

Checklist for received tender material

The list is gone through by: Yolanda Calvo Date: March 2015

Tender conditions have been looked through and assessed by:

Date:_____

Employee: Manager:

Autor: Yolanda Calvo Mateo
Nº TFG: 422.13.194

Legal line of time

Project: Kolstrup

Binding period for subcontractors if confidential tender

Binding period for subcontractors if restricted tender

Price and time cirkular § 7 stk. 1
from receiving tendermaterial to
tender - least 15 days

Act of tender procedures §
3 stk 2

Price and time cirkular § 7
stk. 2
From acceptance to start of
execution
min. 20 working Dage

Min 15 working Days

he period the offer shall be open for acceptance is 40 day

Preparing min. 20 dage.

Negotiation

Max. 8 working days

Tender

Act of tender
procedures § 2-12

Tender

Act of tender procedures § 10 & § 11
stk 1, 2 & 3

Contracting

GC 92 §§ 6 and 7

Ordinance nr 1516 af 16/12/2010
on the installation of construction
site.

Execution

pre-meeting with client
Date: 16.02.2015

Registrations office
Date: 12.02.2015

Request of localplan
Date: 12.02.2015

Tenderdocuments received
Date: 12.02.2015

Request for tenderdocuments
Date: 04.02.2015

Scrutiny of the invitation
Date: 04.02.2015

Invitation to tender
Public or selected
Date: 04.02.2015

Call in for subcontractors
(confidential tender)

Bid
from subcontractors
date:

Invitation to tender
to subcontractors
date 10.03.2015

Are they interested?
date 11.03.2015

Send tendermat.
to subcontractors date 12.03.2015

Tender subcontractors
Date and tim 18.03.2015
10 o´clock

Tender
Date: 24.03.2015

Negotiation meeting
Date: 01.04.2015

invitation from client
to negotiating meeting
date 26.03.2015

quantity control

Call in subcontractors
Date: 17.04.2015

Contract maincontr.subcontractor
Date 20.04.2015

Contract client - maincontractor
Date: 15.04.2015

Performance bonds client and maincontractor
Date 21.04.2015

Performance Bond main - and subcontractor
Date: 23.04.2015

workingplan
date:

Securityplan
date:

Siteplan
date:

GC 92 § 8 Stk 1

Ordinnance. nr. 117 of
5.2.13

Report to the danish working environment authority
(client or coordinator)
date: 15.07.2015

The client takes out insurnce
date: 02.09.2015

the client setting out
main grid lines and heights
date: 23.09.2015

informations to neighbours
date: 16.09.2015

Start of work
Date 01.10.2015

If confidential tender

If restricted tender

Legal line of time

GC 92 § 22 stk 1
15 working days

MAX: 15 working days

objections against site meetings statements

Stopping the work because of no payment

Min 5 working days

GC 92 § 19
at latest at the time for confirmation the statement

GC 92 § 28 subsection 1

max. 10 working days

Jf.GC 92 § 22 , 8

Max. 25/35 working days

GC 92 § 22,

Max. 15working days

Completion notice and handing over

Handing over meeting
The client takes over the responsiblility

Final account

Payment

1. year inspection

5 years inspections

Clients payment (the interim payment)
Date: 26.11.2015

Health and safety meeting
Date: 23.11.2015

Health and safety meeting
Date: 20.11.2015

Additional works request/agreem date 16.11.2015

GC 92 § 14.
Additional works has to be confirmed by the employer before done.

Site meeting
Date: 13.11.2015

Stopping the work date 21.12.2015

handing over with subcontractors

Completion notice from the maincontractor
Date: 21.09.2016

The subcontractors limit for fixing the "defects"
Date: 19.09.2016

The client calls for handing over meeting
date: 23.09.2016

GC 92 § 19 Stk 1-3

Request for interim payment submittet
Date: 25.10.2015

GC 92 § 19

Written notice of 5 working days date 14.12.2015

Go through the work with the subcontractor
Date: 14.09.2016

Site meeting
Date: 06.10.2015

Site meeting
date: 07.12.2015

Completion notice from the subcontractor
Date: 12.09.2016

The work is completed
Date: 22.09.2016

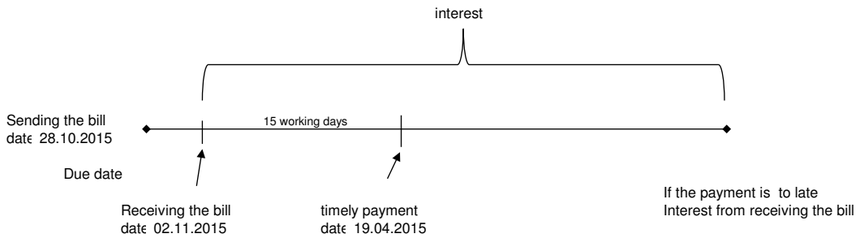
The performance bond shall be reduced to 10%
date: 01.10.2016

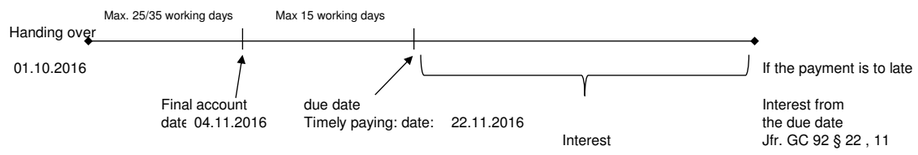
The contractor submit the final account to the client
Date: 04.11.2016

The client pays
Date 22.11.2016

The performance bon shall be reduced to 2%
date 22.11.2017

The performance bond shall be reduced to 0
Date: 22.11.2021





4.2.4. Tenderform

4.2.4.1. Tenderform main trade

Main Trade, total price.

The undersigned hereby offer to construct the above mentioned Main Trade according to the tendermaterial consisting of drawings, specifications and tender letter with attached enclosures and correction sheets to a price of:

Bid for tender transferred from page 2 kr. 40016233

25 % VAT kr. 10004058.25

Bid for tender total incl.VAT kr. 50020291.25

In writing
kr.: fifty million twenty thousand two hundred ninety one point twenty five

All positions in the tender forms incl. Appendices, have to be filled out to ensure that the bid is following the conditions for the tender.

Possible reservations **must** be stated here and attached to be considered as valid.

Reservations:

Bid have to be given in one sample and sent digital on mail.

Date: 23/03/2015

Name: Cofidis Firm

Adr.: Via University College, CHR. M Ostergaards Vej

8700 Horsens

Tel.:

The

Stamp and signature.

The signature of the bidder on this page is binding for the unit prices on the following pages.

Page 2 – Summary of prices excl. VAT from following pages.

1.0	**Building site**	kr. 4062198
1.1	**Carpenter/ joiner works**	kr. 13145168
1.2	Plumbing works	kr. 2730765
1.3	Painting works	kr. 2026464
2.1	**Demolition works**	kr. 3494826
2.2	**Masonry works**	kr. 2005101
2.3	**Soil works**	kr. 994005
2.4	**Concrete works**	kr. 1187085
2.5	**Steel works**	kr. 2455254
3.1	**Sewage in soil works**	kr. 152814
3.2	Water, Heating, Sanitation-plants	kr. 727611
3.3	Ventilation plant	kr. 976087
3.4	Electrical works	kr. 3359221
3.5	Lift works	kr. 2699635

Total price for pos. 1.0 – 3.5 transferred to page 1. **kr. 40016233**

1.0 Building site works

The work is specified in the Building Case Specification (BCS)

1.0-4.1	General	Included in bid
1.0-4.2	Regulations	Included in bid
1.0-4.3	Other regulations	Included in bid
1.0-4.4	Existing conditions	Included in bid
1.0-4.5	Setting out of Client	Included in bid

1.0-4.6	Own Building site	kr. _____
1.0-4.7	Building site keys and - cylinders	kr. _____
1.0-4.8	Scaffolding (shared for use for all trades) and technical appliances	kr. _____
2.0-4.7	Building site traffic areas	kr. _____
2.0-4.8	Depot- and bending area	kr. _____
2.0-4.9	Building site fence	kr. _____
2.0-4.10	Sign boards	kr. _____
2.0-4.11	Cabin for site management, first aid and sanitation-cabin.	kr. _____
3.0-4.7	Building site – Sewage	kr. _____
3.2-4.01	Building site – Water	kr. _____
3.0-4.9	Building site – Electricity	kr. _____

2.0-4.14	Disposable amount Manhours Weatherprecautions, 200 hours per´kr.		kr.	
2.0-4.15	Disposable amount Winterprecautions Insulation with wintermattresses Surveyed covered area	500m²	kr.	
2.0-4.16	Disposable amount Covering and uncovering with tarpaulins, incl.hire Surveyed covered area	500m²	kr.	
2.0-4.17	Snowclearing with machine incl. driver and fuel etc. 20 hours per' kr.		kr.	
2.0-4.18	Laying out 2x3 m steelplates on 5 cm gravel incl. levelling- 20 pcs. per' kr.		kr.	
2.0-4.19	Hire of 2x3 m steelplates 20 pcs.in 60 days – total		kr.	
3.0-4.12	Set up heating equipment 400 V: Rent of 10 kW fan heaters incl. cables, set up and take down, mowing etc.	6 pcs.in 60 days	kr.	

Total pos. 1.0-4.1 – 3.0-4.12 transferred to page 2. **kr. 3452868**

1.1 Carpenter-/Joiner Works

1.1-4.1.1	Building up underlay for zinkcladding	kr. _____
1.1-4.1.2	Building up external ceilings and walls in balcony	kr. _____
1.1-4.2.1	Building up new roof and eaves incl.lifts over ex. roof.	kr. _____
1.1-4.2.2	Roofbitumen	kr. Subcontract
1.1-4.3.1	Delivery and installation of new window sections, incl. Window boards, linings and parapets	kr. _____
1.1-4.3.2	Delivery and installation of wooden shutters	kr. _____
1.1-4.3.3	Delivery and installation of balcony door parties incl. adjustments around doors	kr. _____
1.1-4.3.4	Delivery and installation of new entrance sections	kr. _____
1.1-4.3.5	Delivery and installation of exterior doors in the parterre	kr. _____
1.1-4.3.6	Delivery and installation new internal doors incl. architraves	kr. Subcontract
1.1-4.4.1	Delivery and installation of wood wool and formwork on ceilings in corridors in parterre	kr. Subcontract
1.1-4.4.2	Disassembly / Storage / insulation and re-installation of ceilings in the parterre	kr. Subcontract
1.1-4.4.3	Delivery and installation of insulation and solid plaster ceiling in the passage in parterre-level	kr. Subcontract
1.1-4.4.4	Delivery and installation of plaster ceilings in bathrooms	kr. Subcontract
1.1-4.4.5	Delivery and installation of wood wool in stairwells.	kr. Subcontract
1.1-4.5.1	Parquet floors incl. 50mm insulation (insulation of floors only on the first floor.)	kr. Subcontract

1.1-4.5.2	Wooden terrace	kr.
1.1-4.6.1	Drywall	kr. Subcontract
1.1-4.6.2	Sound resistant wall	kr. Subcontract
1.1-4.7.1	Delivery and installation of new kitchens.	kr. Subcontract
1.1-4.7.2	Delivery and installation of worktops, cupboards in bathrooms	kr. Subcontract
1.1-4.7.3	Delivery and installation of mailboxes	kr.
1.1-4.7.4	Dismantling / disposal / reconfiguration of wardrobes	kr. Subcontract
1.1-4.8	Fire Insulation of Steel Profiles in staircase	kr. Subcontract

Total pos. 1.1-4.1 – 1.1-4.8 transferred to page 2. **kr. 11173393**

1.2 Plumbing Works

1.2-4.1	Zinkcladding external	kr.
1.2-4.2	Gutters and downpipes	kr.
1.2-4.3	Zinc Gutters and sprouting on balconies	kr.

Total pos. 5.0-4.1 – 5.0-4.3 transferred to page 2. **kr. 2321150**

1.3 Painter

1.3-4.1	Walls	kr.
1.3-4.2	Ceilings	kr.
1.3-4.3	Internal wood	kr.
1.3-4.4	Installations and pipes	kr.
1.3-4.5	Jointing	kr.
1.3-4.6	External wood	kr.
1.3-4.7	Foil on windows in the parterre	kr.
1.3-4.8	Foil on stairrnumbers	kr.
1.3-4.9	See tender forms pos. 1.3-4.12	
1.3-4.10	Cleaning	kr.

Total pos. 1.3-4.1-1.3-4.10 transferred to page 2. **kr. 1722494**

2.1 Demolition Works

2.1-4.1	Concrete elements in facade	kr. 388637.6
2.1-4.2	Concrete outer leaf in gables	kr. 529729.6
2.1-4.3	Windows- and door sections	kr. 235581.6
2.1-4.4	Wooden floors	kr. 199949.6
2.1-4.5	Internal walls incl. Doors and windows	kr. 716197.6
2.1-4.6	Floorcovering	kr. 66569.6
2.1-4.7	Wall tiles	kr. 84897.6
2.1-4.8	Bathroom fixtures	kr. 82369.6
2.1-4.9	Kitchen fixtures	kr. 126429.6
2.1-4.10	Suspended ceilings in Parterre modul K/H	kr. 130983.6

Total pos. 2.1-4.1 – 2.1-4.10 transferred to page 2. **kr. 2970602**

2.2 Masonry

2.2-4.1.1	Execution of the pedestal and plinth plaster at facades and gables	kr.	474.464
2.2-4.1.2	Bricking outer leaf of facades and gables	kr.	1.229.864
2.2-4.2.1	Bricklaying and plastering of interior walls made of concrete pore	kr.	
2.2-4.2.2	Casting of concrete	kr.	
2.2-4.2.3	Casting around steelbeams	kr.	
2.2-4.2.4	Plastering of the bores in which there is located openings in the walls	kr.	
2.2-4.2.5	Closing and cleaning of chutes Incl. plaster	kr.	
2.2-4.2.6	Execution of the wetroom membrane on walls tiles and mirror	kr.	Subcontract
2.2-4.2.7	Setup small sanitation in bathrooms	kr.	Dismissed
2.2-4.3.1	New screed with slope in bathrooms	kr.	Subcontract
2.2-4.3.2	Execution of the wetroom membrane and floor tiles	kr.	Subcontract
2.2-4.3.3	Installation of terrazzo in stairwell Incl. 40 mm screed	kr.	Subcontract
2.2-4.3.4	Repair of floor tile covering in parterre-level.	kr.	Subcontract

Total pos. 2.2-4.1.1 – 2.2-3.4 transferred to page 2. **kr. 1.704.328**

2.3 Soil Works

The work is described in building component spec.

2.3-4.1	Excavations	kr. _____
2.3-4.2	Extra- and refills	kr. _____
2.3-4.3	Dry-keeping of soil	kr. _____

Total pos. 2.3-4.1 – 2.3-4.3 transferred to page 2. **kr. 844903**

Following extra/omissions prices as regulated 200 % is needed:

- Transport away 200 m^3 surplus soil excl. depot-fee kr. _____
- Fee to soilreceiver for 100 ton soil class 2 kr. _____
- Fee to soilreceiver for 100 ton soil class 3 kr. _____
- Fee to soilreceiver for 100 ton soil class 4 kr. _____
- 10 pcs. Vane tests kr. _____
- 10 stk. environmental analyzes kr. _____

2.4 Concrete Works

The work is described in building component spec.

2.4-4.1	Foundation beams and consoles	kr. 707811.6
2.4-4.2	Lift-pit	kr. 183469.6
2.4-4.3	Casting of door holes and sliding fitting	kr. 101473.6
2.4-4.4	Walls and casting out blocks	kr. 90189.6
2.4-4.5	Terrain slab and slab at entrance	kr. 64999.6

Total pos. 2.4-4.1 – 2.4-4.5 transferred to page 2. **kr. 1009022**

2.5 Steel Works

The work is described in building component spec.

2.5-4.1	New door lintels	kr. 101209.6
2.5-4.2	Beams and columns HC-WCér	kr. 141801.6
2.5-4.3	Beams and columns i stair rooms and windbreak	kr. 278767.6
2.5-4.4	Rail at stair landing	kr. 462005.6
2.5-4.5	Rail at balconies	kr. 1103183.6

Total pos. 2.5-4.1 – 2.5-4.5 transferred to page 2. **kr. 2086966**

3.1 Sewage in soil

3.1-4.1	Wastewater plant	kr.
3.1-4.2	Rainwater plant	kr.

Total pos. 3.1-4.1 – 3.1-4.2 transferred to page 2. **kr. 129891**

3.2 Water, Heating Sanitation-plant

The work described in building part description Products offered are not identical but equivalent to reference products in the tender documents shall make and type specified in List last under 3.2 plumbing installations. The client's acceptance of a bid shall not relieve the contractor to demonstrate that the products offered meet the same design and technical requirements as the reference product. If a product offered rejected on the grounds that it does not meet the same design and technical requirements as the reference product, the contractor must provide free of charge and build products that can meet the requirements.

3.2-4.01 Building site water – specified under 1.0 building site

Total pos. 3.2 transferred to page 2. **kr. 618496**

3.3 Ventilation Work

The work described in building part description Products offered are not identical but equivalent to reference products in the tender documents shall make and type specified in List last under 3.3 Ventilation Works. The client's acceptance of a bid shall not relieve the contractor to demonstrate that the products offered meet the same design and technical requirements as the reference product. If a product offered rejected on the grounds that it does not meet the same design and technical requirements as the reference product, contractor no charge deliver and build products that can meet the requirements.

Total pos. 3.3 transferred to page 2. **kr. 829674**

3.4 Electrical Work

The work described in building part description. Products offered are not identical but equivalent to reference products in the tender documents shall make and type specified in List last under 3.4 Electrical Work. The client's acceptance of a bid shall not relieve the contractor to demonstrate that the products offered meet the same design and technical requirements as the reference product. If a product offered rejected on the grounds that it does not meet the same design and technical requirements as the reference product, the contractor must provide free of charge and build products that can meet the requirements.

3.4-4.16 Building site power – specified under 1.0 building site

Total pos. 3.4 transferred to page 2. **kr. 2855338**

3.5 Elevator Work

The work is described in building component spec.

3.5-4.1	Elevator work in construction with glass sides in the north and south side and glass doors.	kr.	
		kr.	

Total pos. 3.5 transferred to page 2. **kr. 2294690**

4.2.4.2. Subcontractor price

Frontpage	Maincontract	0	Date	0
			Name	0

Example taken from the book A T 2 page 385

Variable costs			
Rig/ unrig site		425198	
Running site		1225336	
Subcontractors		34013801	
Total cots		35664335	
		41958041	Salesprice excl. Winter, riscs and site manager
Contribution margin			
CM	15,00%		
Rics analyses		0	Riscs if If there is any risk must be justified, the amount written in kr
Capacity costs from the company budget			
Administration costs	9,0%	3776224	
Financing	1,0%	419580	
CM after the capasityv costs		37762237	
Gross ownproduction		41958041	
Conversionfactor		34013801	1,18
Winterlist			
Variable costs		75.900	
Gross price		75900	
Conversionfactor winterlist			1,00
CM	0,00%		
Social costs	0,0%	Key in your own hourly rate	
Factor	180		

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

4.2.4.3. Contribution margen

Building case:

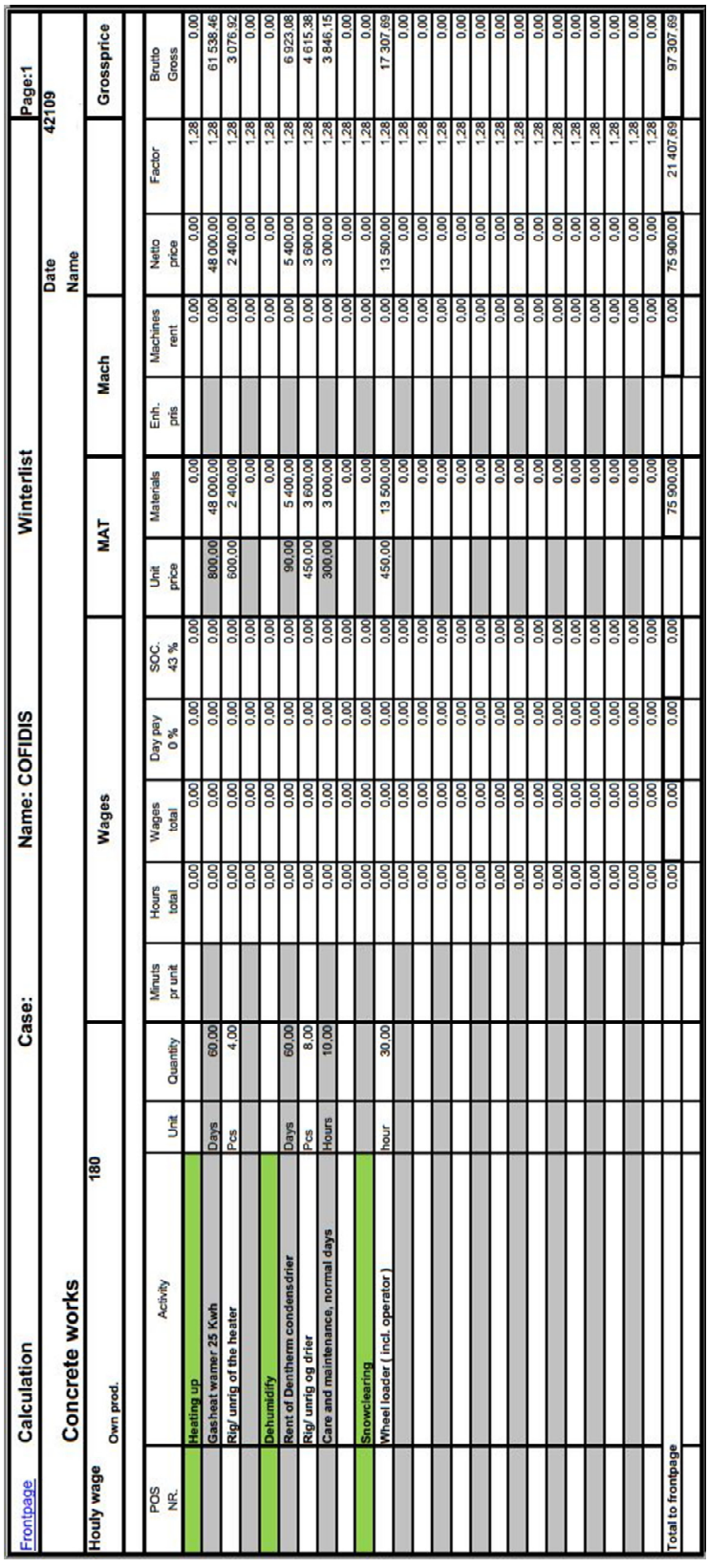
Main Trade:	**Cover ratio Subcontractors**		**11,91%**	**CR your subcontractors**
	Cover ratio Own Trade		**11,91%**	**CR your own trade**
Use numbers from main calculation	***netto***	***brutto***	CR	
Rig and unrig building site	1000396	1135652	**12%**	
Operation of building site	2450672	2782009	**12%**	
Subcontractors (OT) incl. Own trade, nettoprice	7193104	8165630	**12%**	
Other subcontractors	21283684	24161294	**12%**	
Tender price		36244586		
Total variable cost	31927856	31927856		
Contribution Margen		4316730		
Cover Ratio which is your contribution CR			**11,91%**	**Cover Ratio Main Contract**

Casebudget :			
Transferred from trade calculations		**DB**	
Soil and Sewage		0	
Carpenter		0	
Masonry		304055	
Concrete		106466	
Demolition		354667	
Steel		354109	
Transferred from Main Trade calculation			
Main Trade		4316730	
Contribution Margen total		5436026	
Tender price		36244586	**15,00%** **Total CR on the case**

Masonry	**Cover ratio Subcontractors**		**18%**	**CR your subcontractors**
Building case:	**Cover ratio Own Trade**		**18%**	**CR your own trade**
Use the numbers from the trade calculation	netto	brutto	Cover Ratios	
Wages	**1033340**	1260171	*18,00%*	
Materials	**40992**	49990	*18,00%*	
Equipment	**310806**	379032	*18,00%*	
Tender price		**1689193**		
Total variable cost	1385138	1385138		
Contribution Margen		***304055***		
Cover Ratio which is your Contribution			***18,00%***	**Cover Ratio for the trade**

4.2.5. Building site

4.2.5.1. Calculation building site



Frontpage	Calculation	Case:	Name: COFIDIS	Winterlist	Page:1
	Concrete works			Date	42109
				Name	

Houly wage	180	Wages						MAT		Mach				Grossprice
Own prod.														

POS NR.	Activity	Unit	Quantity	Minuts pr unit	Hours total	Wages total	Day pay 0 %	SOC. 43 %	Unit price	Materials	Enh. pris	Machines rent	Netto price	Factor	Brutto Gross
	Heating up				0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
	Gasheat wamer 25 Kwh	Days	60,00		0,00	0,00	0,00	0,00	800,00	48 000,00		0,00	48 000,00	1,28	61 538,46
	Rig/ unrig of the heater	Pcs	4,00		0,00	0,00	0,00	0,00	600,00	2 400,00		0,00	2 400,00	1,28	3 076,92
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
	Dehumidify				0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
	Rent of Dentherm condensdrier	Days	60,00		0,00	0,00	0,00	0,00	90,00	5 400,00		0,00	5 400,00	1,28	6 923,08
	Rig/ unrig og drier	Pcs	8,00		0,00	0,00	0,00	0,00	450,00	3 600,00		0,00	3 600,00	1,28	4 615,38
	Care and maintenance, normal days	Hours	10,00		0,00	0,00	0,00	0,00	300,00	3 000,00		0,00	3 000,00	1,28	3 846,15
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
	Snowclearing				0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
	Wheel loader (incl. operator)	hour	30,00		0,00	0,00	0,00	0,00	450,00	13 500,00		0,00	13 500,00	1,28	17 307,69
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
					0,00	0,00	0,00	0,00		0,00		0,00	0,00	1,28	0,00
Total to frontpage					0,00	0,00	0,00	0,00		75 900,00		0,00	75 900,00	21 407,69	97 307,69

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

	Calculation	**Case**	**Name: COFIDIS**	**Page**
	Frontpage!			
	Concrete works		**Name**	**Grossprice**
Trin:		**Costs**		

Example taken from the book A T 2

Variabel costs			0	
Rig/ unrig site			425198	
Running site			1238470	excl driving money
Variabel costs total			**1663667**	
Contribution margin				
CM own p.	22,00 %	Key your own CM from own. Pr.	**2132906**	Price is excl winter and stipulated benefits
Fix the riscs if there are any.			0	Key in the total in thousand kr.
Capacati costs in relation to the budget				
Administration costs		9,0%	191962	
Financing		1,0%	21329	
The margin after paying the capasity costs			1919616	0
Gross ownproduction			2132906	
Conversionfactor			1663667	1,28
Social costs	43 %		Key in your own costs from the calculation ef the salarycalculation	
Wage factor	180 kr			

Calculation Case: Kolstrup Name: COFIDIS Frontpage

Concrete works Date 15.04.2015

Name

		Wages					Materials	Machines			
		Hours total	Wages Total	Unex. kr	Unex. hours	SOC. 43 %	Materials	Machines rent	Netto price	CM kr	Gross price
Concrete works		0	0	0	0	0	0	0	0	0	0
										0	
Rig/ unrig site		0	0	0	0	0	425 198		425 198	119 928	545 125
										0	
Running site		127	22 920	2 292	15	0		1 202 416	1 238 470	349 312	1 587 781
	Total	127	22 920	2 292	15	0	425 198	1 202 416	1 663 667	469 239	2 132 906
Driving money		Key in your own amount							0	0	0
								Total	1 663 667	469 239	2 132 906
	Months	Monthly unitprice							0		0
Contract manager	0,00	50 000									
Foreman	6,00	40 000							240 000		240 000
Winterbidding list											97 308
Riscs											0
Stipulated payments											0
		Productionprice exl manegment and stipulated payments							1 663 667		
		Productionprice incl. manegment and stipulated payments							1 903 667	469 239	
									Price excl winter and sti. Pay.		2 132 906
									Price incl. winter and sti. Pay.		2 470 214
									Cm demolition works		22,00

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Frontpage **Calculation** **Case:** **Name: COFIDIS** **Running site** **Page: 1**

Concrete works

Date: 42109
Name:

Minutfactc 0			Wages					Materials				Grossprice	
Running													
Activity	Unit	Quantity	Unit minuts	Hours total	Wage Total	Day wage 10 %	SOC. 43 %	Unit price	materials total	Netto prce	factor	Gross price
Scaffolding	m2	1 528,00	5,00	127,33	22 920,00	2 292,00	10 841,16	163,80	250 286,40	286 339,56	1,28	367 102,00
Smaller machines	mounth			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Telephone	mounth	12,00		0,00	0,00	0,00	0,00	250,00	3 000,00	3 000,00	1,28	3 846,15
Dining cabin	mounth	12,00		0,00	0,00	0,00	0,00	7 500,00	90 000,00	90 000,00	1,28	115 384,62
Sanitary cabin	mounth	12,00		0,00	0,00	0,00	0,00	5 000,00	60 000,00	60 000,00	1,28	76 923,08
Foremans cabin	mounth	12,00		0,00	0,00	0,00	0,00	5 000,00	60 000,00	60 000,00	1,28	76 923,08
Manages cabin	mounth	12,00		0,00	0,00	0,00	0,00	5 000,00	60 000,00	60 000,00	1,28	76 923,08
Cabin for meetings	mounth	12,00		0,00	0,00	0,00	0,00	2 500,00	30 000,00	30 000,00	1,28	38 461,54
Material container	mounth	12,00		0,00	0,00	0,00	0,00	8 000,00	96 000,00	96 000,00	1,28	123 076,92
Tower crane	mounth			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Mobile crane	Days	30,00		0,00	0,00	0,00	0,00	6 000,00	180 000,00	180 000,00	1,28	230 769,23
Crane operator	Hours	225,00		0,00	0,00	0,00	0,00	180,00	40 500,00	40 500,00	1,28	51 923,08
Lifts	mounth			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Lifts for persons	Days	30,00		0,00	0,00	0,00	0,00	2 762,00	82 860,00	82 860,00	1,28	106 230,77
Saxlifts	mounth			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Heating up	Pcs	10,00		0,00	0,00	0,00	0,00	5 500,00	55 000,00	55 000,00	1,28	70 512,82
Surveying	hour			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Steel sheets	Days	182,00		0,00	0,00	0,00	0,00	320,00	58 240,00	58 240,00	1,28	74 666,67
Cleaning cabins	Pcs	288,00		0,00	0,00	0,00	0,00	360,00	103 680,00	103 680,00	1,28	132 923,08
Outdoor cleaning	hour	182,50		0,00	0,00	0,00	0,00	180,00	32 850,00	32 850,00	1,28	42 115,38
Container heavy	pcs			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Container mixed	pcs			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Container burnable	pcs			0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Various				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Various				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00
Total to summary up				127,33	22 920,00	2 292,00	10 841,16		1 202 416,40	1 238 469,56		1 587 781,49

Frontpage **Calculation** **Case** **Name: COFIDIS** **Rig/ unrig site** **Page: 1**

Date 42109
Name

Concrete works

Minutfactor 180
Rig/ unrig site

Activity	Unit	Quantity	Wages					MAT			Grossprice		
			hours pr unit	Hours total	Wage total	Day wage 0 %	SOC. 43 %	Unit. price	Materials	Netto price	Factor	Gross price	
Arrangement of the site				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Set up cabins	Pcs	10,00		0,00	0,00	0,00	0,00	2 800,00	28 000,00	28 000,00	1,28	35 897,44	35 897,44
Set up sanitary cabins	Pcs	2,00		0,00	0,00	0,00	0,00	3 000,00	6 000,00	6 000,00	1,28	7 692,31	7 692,31
Pick down cabibns	Pcs	12,00		0,00	0,00	0,00	0,00	2 800,00	33 600,00	33 600,00	1,28	43 076,92	43 076,92
El instalations	Pcs	1,00		0,00	0,00	0,00	0,00	2 000,00	2 000,00	2 000,00	1,28	2 564,10	2 564,10
LigthsBelysning	Pcs	13,00		0,00	0,00	0,00	0,00	3 000,00	39 000,00	39 000,00	1,28	50 000,00	50 000,00
Water	Pcs	1,00		0,00	0,00	0,00	0,00	2 000,00	2 000,00	2 000,00	1,28	2 564,10	2 564,10
Telephone				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Crane up and down				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Mobile crane	hours	8,00		0,00	0,00	0,00	0,00	180,00	1 440,00	1 440,00	1,28	1 846,15	1 846,15
Crane tracks				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Lifts up and down	hours	20,00		0,00	0,00	0,00	0,00	180,00	3 600,00	3 600,00	1,28	4 615,38	4 615,38
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Site roads				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Steel sheets	hours	9,00		0,00	0,00	0,00	0,00	180,00	1 620,00	1 620,00	1,28	2 076,92	2 076,92
Fences	Days	365,00		0,00	0,00	0,00	0,00	687,50	250 937,50	250 937,50	1,28	321 714,74	321 714,74
Gates	Month	12,00		0,00	0,00	0,00	0,00	1 750,00	21 000,00	21 000,00	1,28	26 923,08	26 923,08
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Final cleaning	hours	200,00		0,00	0,00	0,00	0,00	180,00	36 000,00	36 000,00	1,28	46 153,85	46 153,85
Transport of cabins				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Transport of machinery				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
				0,00	0,00	0,00	0,00		0,00	0,00	1,28	0,00	0,00
Total to summary up				0,00	0,00	0,00	0,00		425 197,50	425 197,50		545 125,00	545 125,00

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

4.2.5.2. Quantities for building site

| Calculation of quantities schedule | | |

| Calculation of quantities schedule | | |

Calculation of quantities schedule												Company		COFIDIS
Case: Kolstrup Housing Association													Page	3
Contract: 4 Building site		Waste											Name	
Pos nr: Cabin		Waste											Date	15.04.2015
Drawing nr.		Waste												
		Pos. Nr	Areal location		Description	Pattern drawing	Quantity	Price pr unit	Total price					
							Pcs	kr	kr					
		4	Building site		MaterialContainers	(1)	2	800	1600					
		4	Building site		MaterialContainers	(2)	4	800	3200					
		4	Building site		MaterialContainers	(3)	2	800	1600					
		4	Building site		MaterialContainers	(4)	2	800	1600					

Calculation of quantities schedule											Company		VIA BYG
Case: Kolstrup Housing Association												Page	4
Contract: 4 Building site		Waste										Name	
Pos nr: Heating up		Waste										Date	15.04.2015
Drawing nr.		Waste											
		Waste											
		Pos. Nr	Area/ location			Description	Pattern drawing	Quantity	Price pr unit	Total price year			
								Pcs	kr	kr			
		4	Building site			Heating cabins	(1)	2	5500	11000			
		4	Building site			Heating cabins	(2)	4	5500	22000			
		4	Building site			Heating cabins	(3)	2	5500	11000			
		4	Building site			Heating cabins	(4)	2	5500	11000			

| Calculation of quantities schedule | | |

| Calculation of quantities schedule | | |

Calculation of quantities schedule															Company		COFIDIS
Case: Kolstrup Housing Association																Page	7
Contract: 4 Building site		Waste														Name	.
Pos nr: Cabin cleaning		Waste														Date	15.04.2015
Drawing nr.		Waste															
		Pos. Nr	Area/ location			Description	Length	Price kr/m/day	Days	price pr day	Total price						
		4	Building site			Construction site fencing	275	2,5	365	687,5	250937,5						

Calculation of quantities schedule												Company		COFIDIS
Case: Kolstrup Housing Association													Page	8
Contract: 4 Building site		Waste											Name	
Pos nr: Cabin cleaning		Waste											Date	15.04.2015
Drawing nr.		Waste												
		Waste												
		Pos. Nr		Area/ location		Description		Gates	Price pr month	Month	Total price			
								pcs	kr		kr			
		4		Building site		Construction site fencing		1	1750,0	12	21000			
						http://systemsikring.com/no/forside/bygg-og-anlegg/byggeplass-port								

4.3. CONTRACTING

4.3.1. Contracts

4.3.1.1. Invitation to subcontractors

To : JEEC Contractor .

,**OBJECT**:.

COFIDIS would like to invite JEEC Contractor to give a price /tender for the Carpentry works concerning the project Kolstrup

The Tender list has to be completed and delivered at the following address:

VIA University College, Chr. M. Østergaards Vej, 8700 Horsens, F 106.

Where the tendering will take place

TENDERPROCEDURE:

The procedure follows the rules for restricted tender in the tenderact. You are one by 10 participations contractors who are invited to give a bid and the awarding criteria is lowest price.

PRE-MEETING:

JEEC COntractor will be invited to an on-site pre-meeting on 10.3.2015, Kolstrup Housing association department 16, 10-16 AAbenraa in order to discover the project and discuss with the design team and COFIDIS

.

TENDER MATERIAL:

- *Tender forms with possible Annex*
- *Letter of invitation to tender (this document)*
- *Building Case specification*
- *Work Specifications*
- *Drawings and list of drawings dated 09.02.2015*

- *Time schedule 17.08.2015*
- *Geotechnical report*

Building and Housing Agency`s circular dated 10. October 1991, called Price and time for construction, etc.

Building and Housing Agency`s Departmental Order re construction during winter

Building and Housing Agency`s circular re the quality of construction works

EXECUTION TIME:

The execution of the project, in its entirety, will be from 1. October 2015 to handover 1. October

2016

You must return the completed Tenderlist in a closed envelope no later than 24.3.2015 at 10.15 AM at the following address: Chr. M. Oestergaards Vej 4, F 106.

If the bids are send by mail, it is the responsibility of the contractor that they arrive in due time at the place for tender.

The bids are binding for the bidder 60 working days from the time of the tender.

SPECIFIC CONDITION FOR THE WORK:

General Conditions for Works and Supply 1992, GC92, is valid for the works, with the following changes and additions:

payment conditions:

Upon written request to the Main contractor the Subcontractor shall be entitled to receive payment once a month for work performed, etc. Within 30 days of receipt of such request, the Main contractor shall effect payment of the amount for which works and materials in accordance with the contract have been provided on site.

Client's payment deadline for the final and complete interim certificate is 20 days. Interest is payable on the sum from that point on.

Surety bond:

The subcontractor must, within 8 days of entering into a contract with the main contractor, establish a performance bond in accordance with GC 92´s § 6 re surety. The performance bond must constitute 15% of the total contract sum excl. VAT.

The performance bond must be drawn up in accordance with GC 92´s § 6

Surety bond from maincontractor ?

The Main contractor must, within 8 days of entering into an agreement with the subcontractor, provide a surety as stipulated in GC´s § 7. The surety must constitute 3 months' average payment, but minimum 10% of the subcontract sum excl. VAT, Dkr.:2793348,00 and must be drawn up in accordance with GC 92´s § 7.

The performance bond must be drawn up in accordance with GC 92´s § 6.

Delay of the subcontractor:

In case of delay on the part of the subcontractor, a penalty of Dkr. 10295 per working day, comprising 10% of the total contract sum, must be paid

Terms for handing over:

GC 92 §28 Just before completion of the work the contractor must inform the employer in writing of the time completion. The employer shall then convene the contractor to a handing-over meeting to take place within 10 workday of the time indicated

CONTACT:

All questions must be send to: Henrik Kopp or Michael Christiansen latest 17. March 2015 and be answered latest 20. March 2015..

Sincerely,

COFIDIS

4.3.1.2. Main contract

Between

Name VIA University College
Address CHR M Ostergaards Vej
Zip code and city 8700 Horsens

and

Name Cofidis Firm
Address CHR M Ostergaards Vej
Zip code and city 8700 Horsens

who have, on this day, entered into the following:

MAIN CONTRACTOR C ONTRACT

For the construction of Project Kolstrup.

1.

The contractor undertakes the execution of works in the

Main Contract

2.

The bases for the delegation of the works are the following documents:

1. This contract.
2. The contractor's bid dated 04 02 2015, subject to the reservations contained therein.
3. *Correction Letter No. 1, dated xx.xx.xxxx*
4. Invitation to tender, dated 04 02 2015
5. Conditions of contract (common terms), dated 24 03 2015
6. Work specifications, dated 09 02 2009
7. Drawing schedule with architectural drawings no.: ... . dated 09 02 2009
8. Drawing schedule with engineering drawings dated 09 02 2009
9. Drawing schedule with landscaping drawings, dated 09 02 2009
10. GC 92
11. ... ...

(In case of any discrepancy between the above documents, the documents take precedence in the order listed)

Comentario [Vik1]: IF ranking is to be indicated in the document, one must have control over their significance/meaning

3

The client undertakes to pay the contractor for the correct execution of his contractual obligations:

Tendered bid/ accept sum excl. VAT	Dkr 37 762 237. 00
Stipulated payment	÷ Dkr 2 253 996. 00
Total contract sum excl. VAT	Dkr 40 016 233. 00
+ 25% VAT	Dkr 10 004 058. 25
Total contract sum incl. VAT	**Dkr 50 020 291. 25**

They stipulated payments are paid according to the unit prices stated in the bid, and adjusted if necessary in compliance with GC 92.

4.

The price is fixed for a period of 12 months from the bid day, however, after 1 year the price and work will be regulated in accordance with the Building and Housing Agency's circular dated 10 October 1991 re Price and Time, § 8 and § 9.

Comentario [Vik2]: Or The price is fixed for the whole contractperiod

Comentario [Vik3]: Tender documents – Dansk Byggeris standard reservations

Comentario [Vik4]: Coordinated with sub contract and L-contract?

5.

Billing and payment is in accordance with the case specifications provided by the client.

6.

The work must be started no later than 01 10 2015, and handed over no later than 01 10 2016
The work must also be performed in accordance with the attached time schedule.
In case of delay on the part of the contractor, a penalty of Dkr. 1000 per working day, comprising 0.1% of the total contract sum, must be paid (alternatively, Danish law´s general liability rules can be made applicable here).

Comentario [Vik5]: As comment 5

7.

The reservations taken in the bid are hereby approved, except for the ones mentioned below which are void:
Standard Reservations of May 2008, paragraphs 3,

Comentario [Vik6]: Depends on the terms in the bid from the contractor and the negotiation between the client and the contractor

8.

The contractor must, within 8 days of entering into a contract with the client, establish a performance bond in accordance with GC 92´s § 6 re surety. The performance bond must constitute DKK 6 002 434, 95, representing 15% of the total contract sum excl. VAT.

The performance bond must be drawn up in accordance with GC 92´s § 6.

9.

The client must, within 8 days of entering into an agreement with the contractor, provide a surety as stipulated in GC´s § 7. The surety must constitute Dkr 9 440 559. 25, equivalent to 3 months' average payment and must be drawn up in accordance with GC 92´s § 7.

Comentario [Vik7]: Contractsum : contractperiod in month x 3

10.

The client must take out fire and storm damage insurance from the beginning of the construction works. The contractor, and possible subcontractors, must be included as insured in the client's insurance policy.

The contractor has taken out the usual liability insurance from: Forsikringsselskabet GI Skanderborg G/S.

Comentario [Vik8]: The name of the insurance company

11.

Other specific terms:
Could be

Executives who have power of attorney.

For client:

For contractor:

Comentario [Vik9]: The Main contractor´s possible demands regarding advance payments for deliveries more than 20 days before delivery:

"The client is obliged to pay 10% of the bid list price for concrete elements within 10 working days after the order for concrete deliveries are issued, i.e., on xx.xx.xxxx.

The Main contractor must provide surety for the prepaid amount in the form of bank guarantee "

Comentario [Vik10]: The name of the persons who can make binding agreements on behalf of the client and the contractor

Date: 04 02 2015

On behalf of the client... ... ...

On behalf of the contractor

4.3.1.3. Subcontract agreement

Between

COFIDIS

VIA University College, Chr. M. Østergaards Vej,

8700 Horsens

And

JEEC Contractor

Ove jensens alle 2 B

8700 Horsens

There has, on this day, been entered into the following:

SUBCONTRACT AGREEMENT

Regarding the execution of the Carpentry contract on: Project Kolstrup

1.

The contractor undertakes the execution of works as a subcontractor in the individual trade contract procurement form

2.

The bases for the delegation of the works are the following documents:

1. This contract.

2. The contractor's bid dated 10.03.2015

3. Invitation to tender, dated 10.03.2015

4. Conditions of contract (common terms), dated 09.02.2015

5. Work specifications, dated 09.02.2015

6. Drawing schedule with architectural drawings no.: A-001 – A-801 dated 09.02.2015

7. Drawing schedule with engineering drawings G00 dated 09.02.2015

8. Drawing schedule with landscaping drawings, dated 09.02.2015

9. GC 92

3.

The Main contractor undertakes to pay the subcontractor for the correct execution of his contractual obligations:

Total contract sum excl. VAT	kr. 11173392
+ 25% VAT	kr. 2793348
Total contract sum incl. VAT	**kr. 13966740**

Write Dkr: thirteenmillionninehundredsixtysixthousandsevenhundredandfourthy

4.

The price is fixed for a period of 12 months from the bid day/ for the whole construction period, however, in accordance with the Building and Housing Agency's circular dated 10 October 1991 re Price and Time, § 8 and § 9.

5.

Billing and payment is in accordance with GC 92

Upon written request to the Main contractor the Subcontractor shall be entitled to receive payment once a month for work performed, etc. Within 30 days of receipt of such request, the Main contractor shall effect payment of the amount for which works and materials in accordance with the contract have been provided on site.

Client’s payment deadline for the final and complete interim certificate is 20 days. Interest is payable on the sum from that point on.

6.

The work must be started no later than 01.09.2015, and handed over no later than 01.09.2016.

Handing over in accordance with GC 92 is achieved by handing over of the collective construction works to the client.

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

The work must also be performed in accordance with the attached time schedule Kolstrup housing Association.

In case of delay on the part of the subcontractor, a penalty of Dkr. 10295 per working day, comprising 10% of the total contract sum, must be paid

7.

Additional works may not be commenced without a written agreement between the Main contractor and subcontractor. There can be no agreement between the subcontractor and client about the work covered by this subcontract agreement.

8.

The reservations taken in the bid are hereby approved, except for the ones mentioned below, which are void:

Standard Reservations of March 2001, paragraphs 3, 7 and 8.

9.

The subcontractor must, within 8 days of entering into a contract with the Main contractor, establish a performance bond in accordance with GC 92 § 6´s named surety. The performance bond must constitute 15% of the total subcontract sum excl. VAT, Dkr.:1676008,00. The performance bond will be reduced thereafter pursuant to AB 92.

The performance bond must be drawn up in accordance with GC 92´s § 6.

10.

The Main contractor must, within 8 days of entering into an agreement with the subcontractor, provide a surety as stipulated in GC´s § 7. The surety must constitute 3 months' average payment, but minimum 10% of the subcontract sum excl. VAT, Dkr.:2793348,00 and must be drawn up in accordance with GC 92´s § 7.

11.

The subcontractor must be included in the client´s fire and storm damage insurance policy. The subcontractor has taken out the usual liability insurance from: Tryg AS

12.

The subcontractor acknowledges that claims regarding defects and shortcomings, in accordance with the circumstances mentioned in GC 92 § 5, Part 5, by the client shall be enforceable directly against the subcontractor, and that disputes concerning defects should be treated by the Building and construction Arbitration Court of Copenhagen.

13.

Executives who have power of attorney.

For the Main contractor: Tiffany Lentin, Yolanda Calvo Mateo and Terje Berge

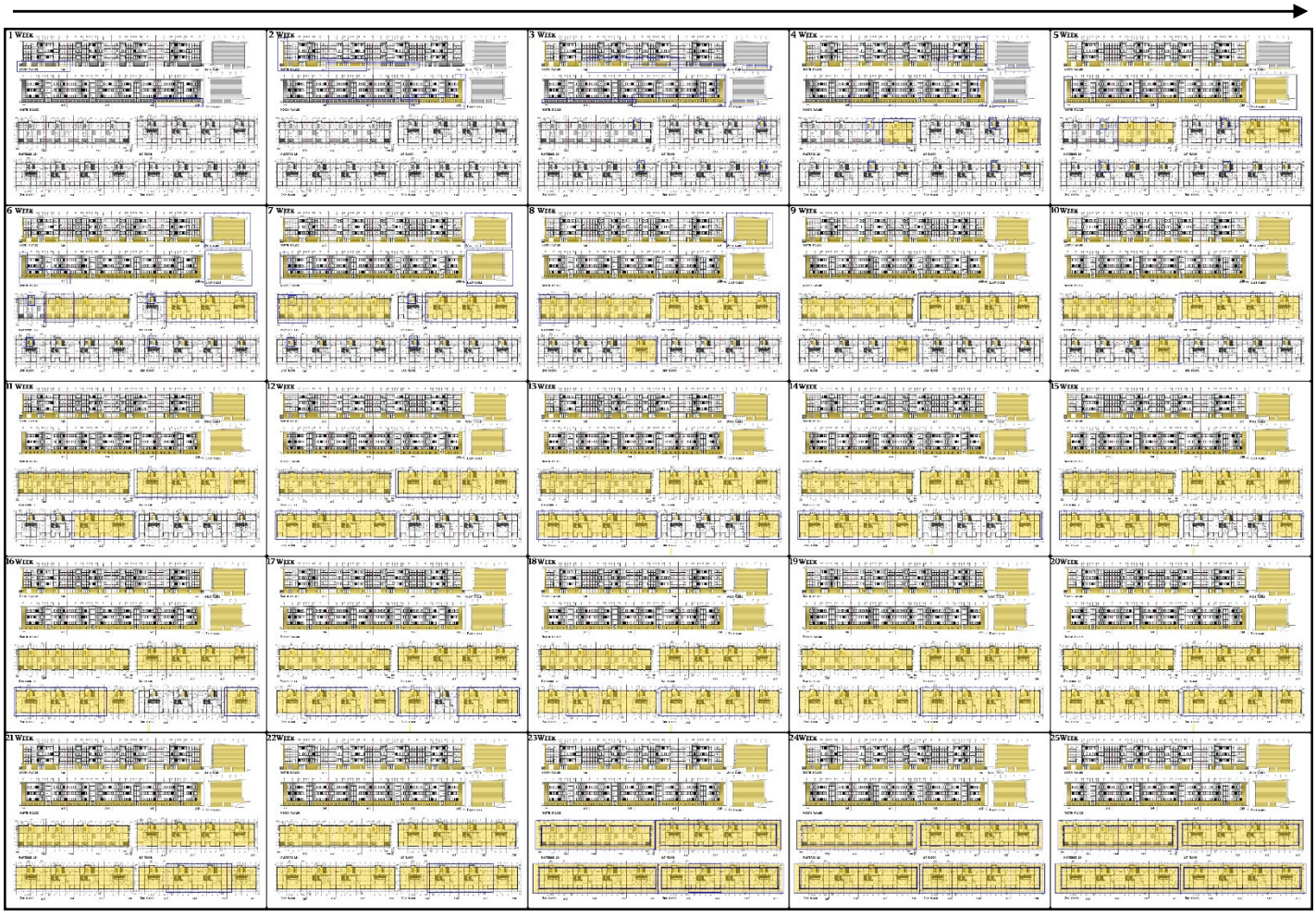
For the subcontractor: Johan Løve Gjersvik

Yolanda Calvo, the 20.03.2015	Johan Løve Gjersvik, the 20.032015
On behalf of the Main contractor COFIDIS	On behalf of the subcontractor JEEC Contractor

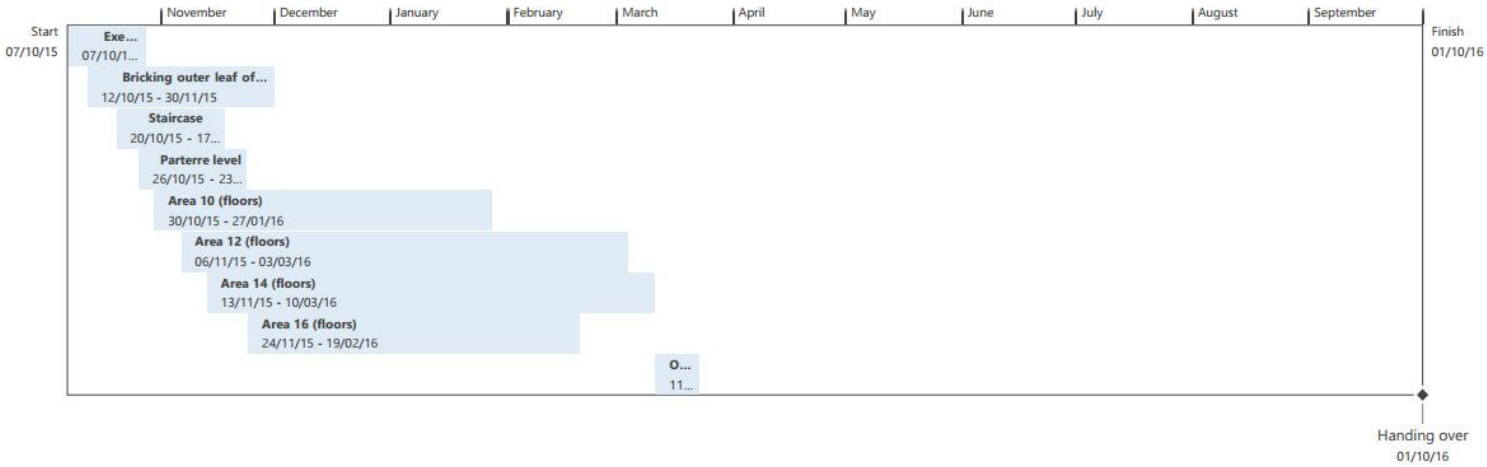
4.4. STARTING UP / MOBILIZING

4.4.1. Process time schedule

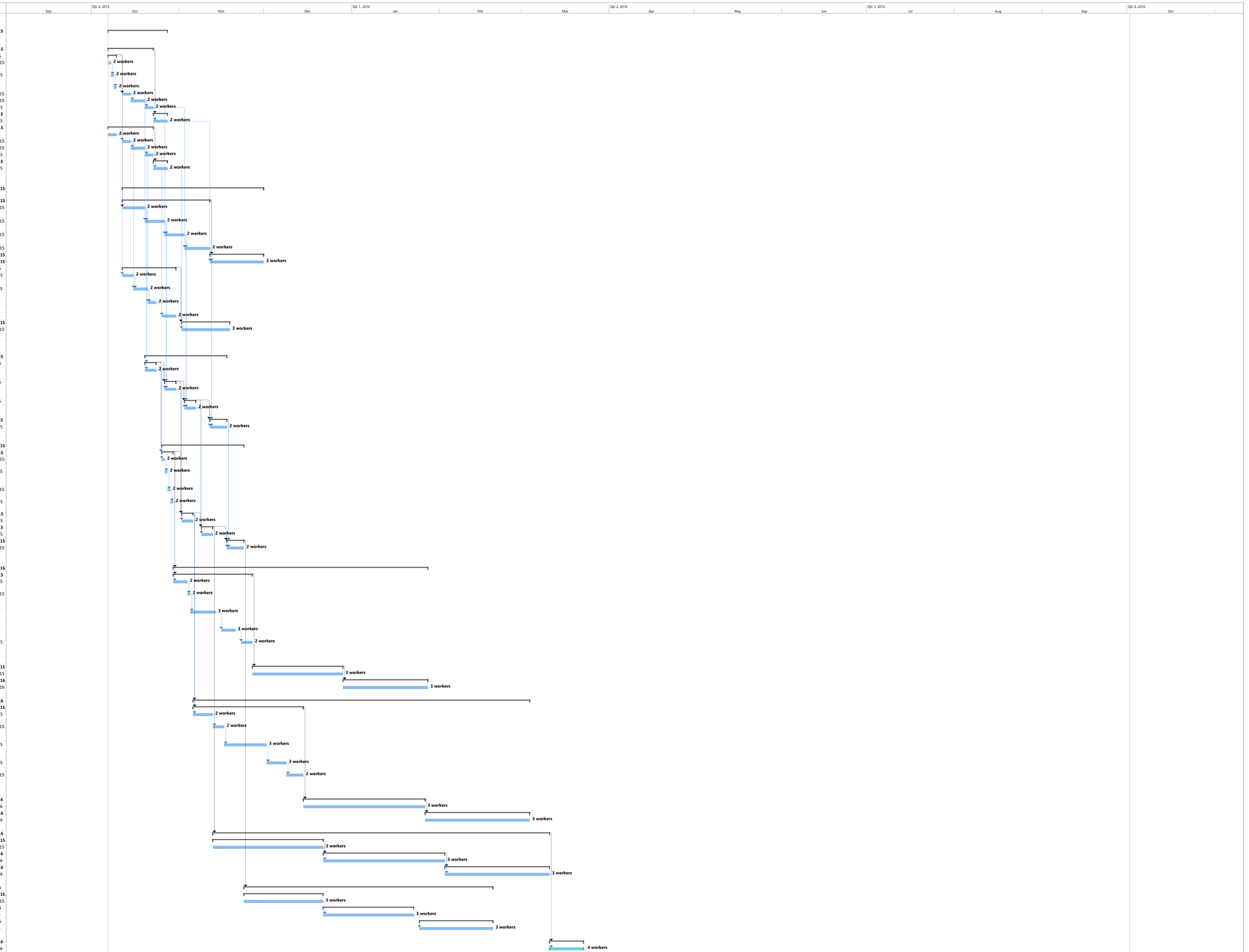
4.4.1.1. Sequence planning



4.4.1.2. Time schedule of critical supplies



ID	Task Mode	Task Name	Duration	Start	Finish
1		**Masonry**			
2		***Exterior***			
3		**Execution of the pedestral and plinth plaster at facades and gables**	**15 days**	**Wed 07/10/15**	**Tue 27/10/15**
4		**North facade**	**12 days**	**Wed 07/10/15**	**Thu 22/10/15**
5		**Area 10**	**3 days**	**Wed 07/10/15**	**Fri 09/10/15**
6		Bitumen paint + moisture barrier	1 day	Wed 07/10/15	Wed 07/10/15
7		Hard insulation + thermoblock	1 day	Thu 08/10/15	Thu 08/10/15
8		Mortar	1 day	Fri 09/10/15	Fri 09/10/15
9		Area 12	3 days	Mon 12/10/15	Wed 14/10/15
10		Area 14	3 days	Thu 15/10/15	Mon 19/10/15
11		Area 16	3 days	Tue 20/10/15	Thu 22/10/15
12		**West gable**	**3 days**	**Fri 23/10/15**	**Tue 27/10/15**
13		Gable	3 days	Fri 23/10/15	Tue 27/10/15
14		**South facade**	**12 days**	**Wed 07/10/15**	**Thu 22/10/15**
15		Area 10	3 days	Wed 07/10/15	Fri 09/10/15
16		Area 12	3 days	Mon 12/10/15	Wed 14/10/15
17		Area 14	3 days	Thu 15/10/15	Mon 19/10/15
18		Area 16	3 days	Tue 20/10/15	Thu 22/10/15
19		**East gable**	**3 days**	**Fri 23/10/15**	**Tue 27/10/15**
20		Gable	3 days	Fri 23/10/15	Tue 27/10/15
21					
22					
23		**Bricking outer leaf of facades and gables**	**36 days**	**Mon 12/10/15**	**Mon 30/11/15**
24		**North facade**	**23 days**	**Mon 12/10/15**	**Wed 11/11/15**
25		Area 10	6 days	Mon 12/10/15	Mon 19/10/15
26					
27		Area 12	5 days	Tue 20/10/15	Mon 26/10/15
28					
29		Area 14	5 days	Tue 27/10/15	Mon 02/11/15
30					
31		Area 16	7 days	Tue 03/11/15	Wed 11/11/15
32		**West gable**	**13 days**	**Thu 12/11/15**	**Mon 30/11/15**
33		Gable	13 days	**Thu 12/11/15**	**Mon 30/11/15**
34		**South facade**	**15 days**	**Mon 12/10/15**	**Fri 30/10/15**
35		Area 10	4 days	Mon 12/10/15	Thu 15/10/15
36					
37		Area 12	3 days	Fri 16/10/15	Tue 20/10/15
38					
39		Area 14	3 days	Wed 21/10/15	Fri 23/10/15
40					
41		Area 16	5 days	Mon 26/10/15	Fri 30/10/15
42		**East gable**	**13 days**	**Mon 02/11/15**	**Wed 18/11/15**
43		Gable	13 days	Mon 02/11/15	Wed 18/11/15
44					
45					
46		***Interior***			
47		**Staircase**	**21 days**	**Tue 20/10/15**	**Tue 17/11/15**
48		**Area 10**	**4 days**	**Tue 20/10/15**	**Fri 23/10/15**
49		Installation of terrazo in stairwell incl. 40mm	4 days	Tue 20/10/15	Fri 23/10/15
50		**Area 12**	**4 days**	**Tue 27/10/15**	**Fri 30/10/15**
51		Installation of terrazo in stairwell incl. 40mm	4 days	Tue 27/10/15	Fri 30/10/15
52		**Area 14**	**4 days**	**Tue 03/11/15**	**Fri 06/11/15**
53		Installation of terrazo in stairwell incl. 40mm	4 days	Tue 03/11/15	Fri 06/11/15
54		**Area 16**	**4 days**	**Thu 12/11/15**	**Tue 17/11/15**
55		Installation of terrazo in stairwell incl. 40mm	4 days	Thu 12/11/15	Tue 17/11/15
56					
57		**Parterre level**	**21 days**	**Mon 26/10/15**	**Mon 23/11/15**
58		**Area 10**	**4 days**	**Mon 26/10/15**	**Thu 29/10/15**
59		Casting around the steelbeams	1 day	Mon 26/10/15	Mon 26/10/15
60		Plastering of the bores in which there is located openings in the walls	1 day	Tue 27/10/15	Tue 27/10/15
61		Closing and cleaning of chutes incl. plaster	1 day	Wed 28/10/15	Wed 28/10/15
62		Repair of the floor tile covering in parterre level	1 day	Thu 29/10/15	Thu 29/10/15
63		**Area 12**	**4 days**	**Mon 02/11/15**	**Thu 05/11/15**
64			4 days	Mon 02/11/15	Thu 05/11/15
65		**Area 14**	**4 days**	**Mon 09/11/15**	**Thu 12/11/15**
66			4 days	Mon 09/11/15	Thu 12/11/15
67		**Area 16**	**4 days**	**Wed 18/11/15**	**Mon 23/11/15**
68			4 days	Wed 18/11/15	Mon 23/11/15
69					
70					
71		**Area 10 (floors)**	**60 days?**	**Fri 30/10/15**	**Wed 27/01/16**
72		**1st floor**	**20 days?**	**Fri 30/10/15**	**Thu 26/11/15**
73		Bricklaying and plastering of interior walls	3 days	Fri 30/10/15	Tue 03/11/15
74		Casting around the steelbeams + plastering of reveals	1 day	Wed 04/11/15	Wed 04/11/15
75		Execution of the wetroom membrane on walltiles and mirror	7 days	Thu 05/11/15	Fri 13/11/15
76		New screed with falls to gulli in bathrooms	5 days	Mon 16/11/15	Fri 20/11/15
77		Execution of the wetroom membrane and floortiles	4 days	Mon 23/11/15	Thu 26/11/15
78		Closing and cleaning			
79		**2nd floor**	**20 days**	**Fri 27/11/15**	**Mon 28/12/15**
80			20 days	Fri 27/11/15	Mon 28/12/15
81		**3rd floor**	**20 days**	**Tue 29/12/15**	**Wed 27/01/16**
82			20 days	Tue 29/12/15	Wed 27/01/16
83					
84		**Area 12 (floors)**	**81 days?**	**Fri 06/11/15**	**Thu 03/03/16**
85		**1ª planta**	**27 days?**	**Fri 06/11/15**	**Mon 14/12/15**
86		Bricklaying and plastering of interior walls	5 days	Fri 06/11/15	Thu 12/11/15
87		Casting around the steelbeams + plastering of reveals	2 days	Fri 13/11/15	Mon 16/11/15
88		Execution of the wetroom membrane on walltiles and mirror	11 days	Tue 17/11/15	Tue 01/12/15
89		New screed with falls to gulli in bathrooms	5 days	Wed 02/12/15	Tue 08/12/15
90		Execution of the wetroom membrane and floortiles	4 days	Wed 09/12/15	Mon 14/12/15
91		Closing and cleaning			
92		**2ª planta**	**27 days**	**Tue 15/12/15**	**Tue 26/01/16**
93			27 days	Tue 15/12/15	Tue 26/01/16
94		**3ª planta**	**27 days**	**Wed 27/01/16**	**Thu 03/03/16**
95			27 days	Wed 27/01/16	Thu 03/03/16
96					
97		**Area 14 (floors)**	**81 days**	**Fri 13/11/15**	**Thu 10/03/16**
98		**1ª planta**	**27 days**	**Fri 13/11/15**	**Mon 21/12/15**
99			27 days	Fri 13/11/15	Mon 21/12/15
100		**2ª planta**	**27 days**	**Tue 22/12/15**	**Tue 02/02/16**
101			27 days	Tue 22/12/15	Tue 02/02/16
102		**3ª planta**	**27 days**	**Wed 03/02/16**	**Thu 10/03/16**
103			27 days	Wed 03/02/16	Thu 10/03/16
104					
105		**Area 16 (floors)**	**60 days**	**Tue 24/11/15**	**Fri 19/02/16**
106		**1ª planta**	**20 days**	**Tue 24/11/15**	**Mon 21/12/15**
107			20 days	Tue 24/11/15	Mon 21/12/15
108		**2ª planta**	**20 days**	**Tue 22/12/15**	**Fri 22/01/16**
109			20 days	Tue 22/12/15	Fri 22/01/16
110		**3ª planta**	**20 days**	**Mon 25/01/16**	**Fri 19/02/16**
111			20 days	Mon 25/01/16	Fri 19/02/16
112					
113		***Outside areas***	**8 days**	**Fri 11/03/16**	**Tue 22/03/16**
114			8 days	Fri 11/03/16	Tue 22/03/16
115		***Handing over***	0 days	Sat 01/10/16	Sat 01/10/16



4.4.1.3. Trade process analysis

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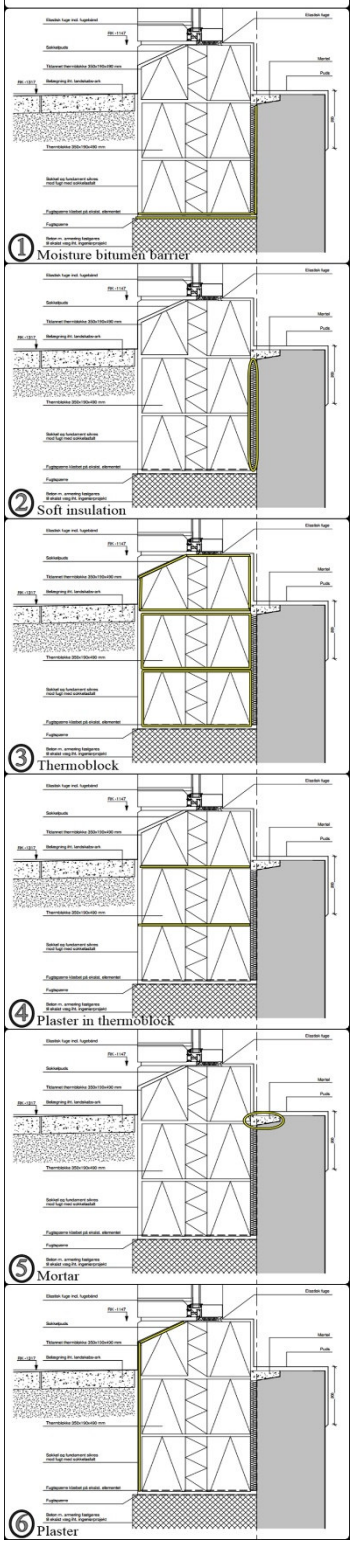
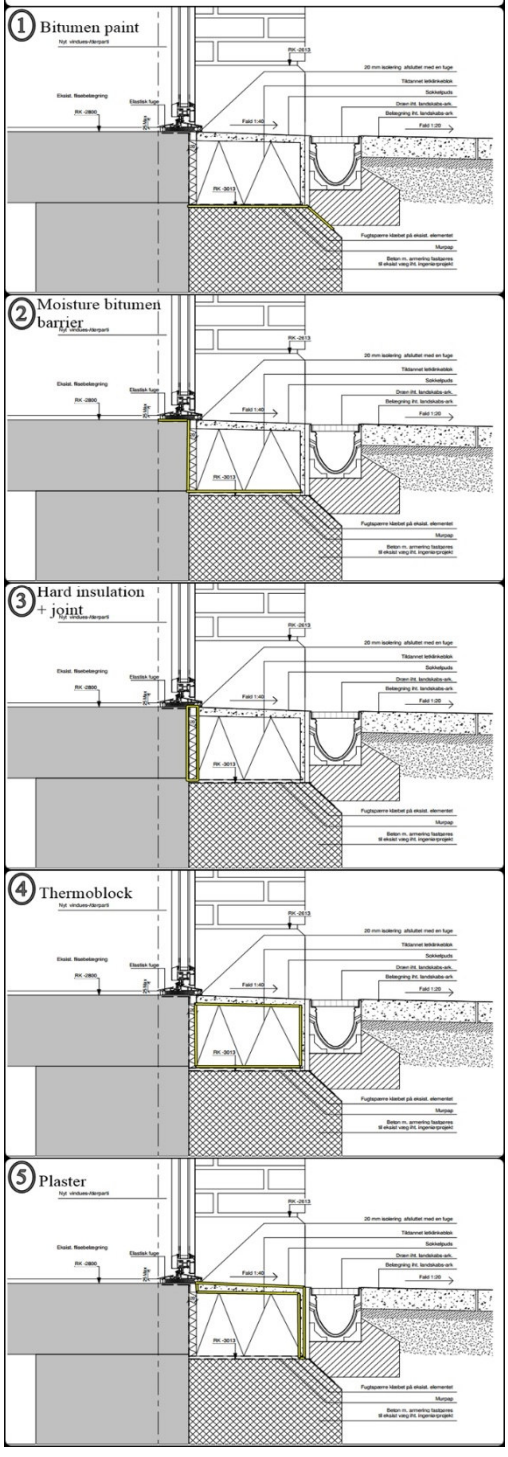
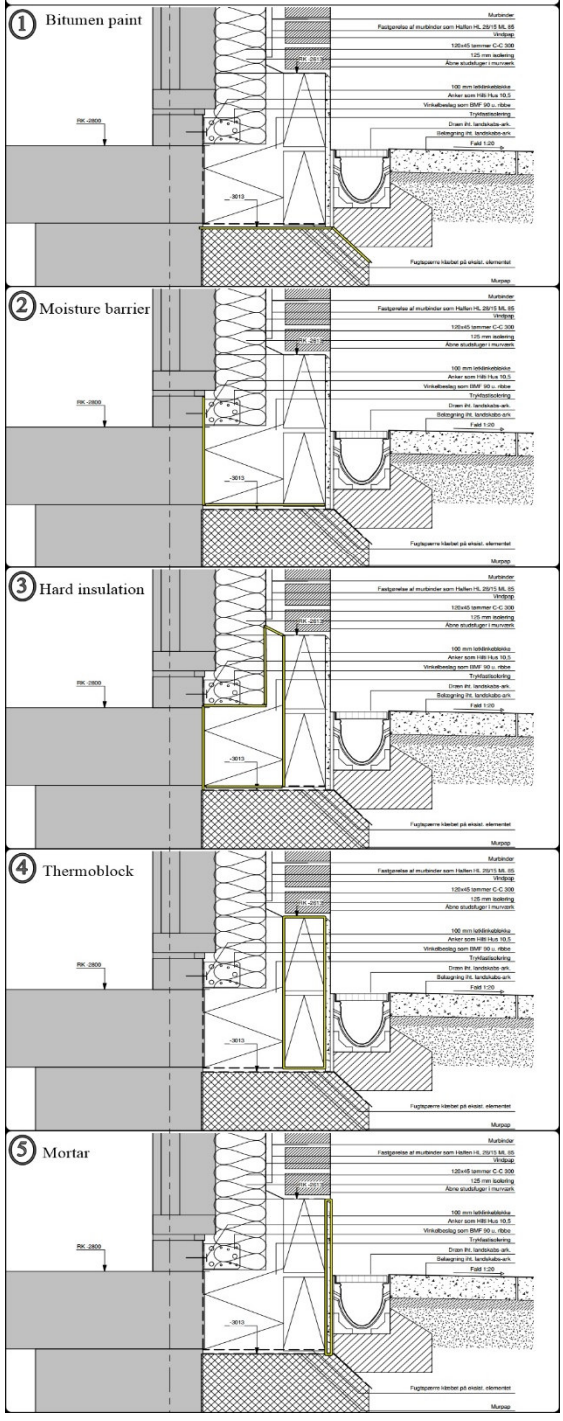


A 606 Plint

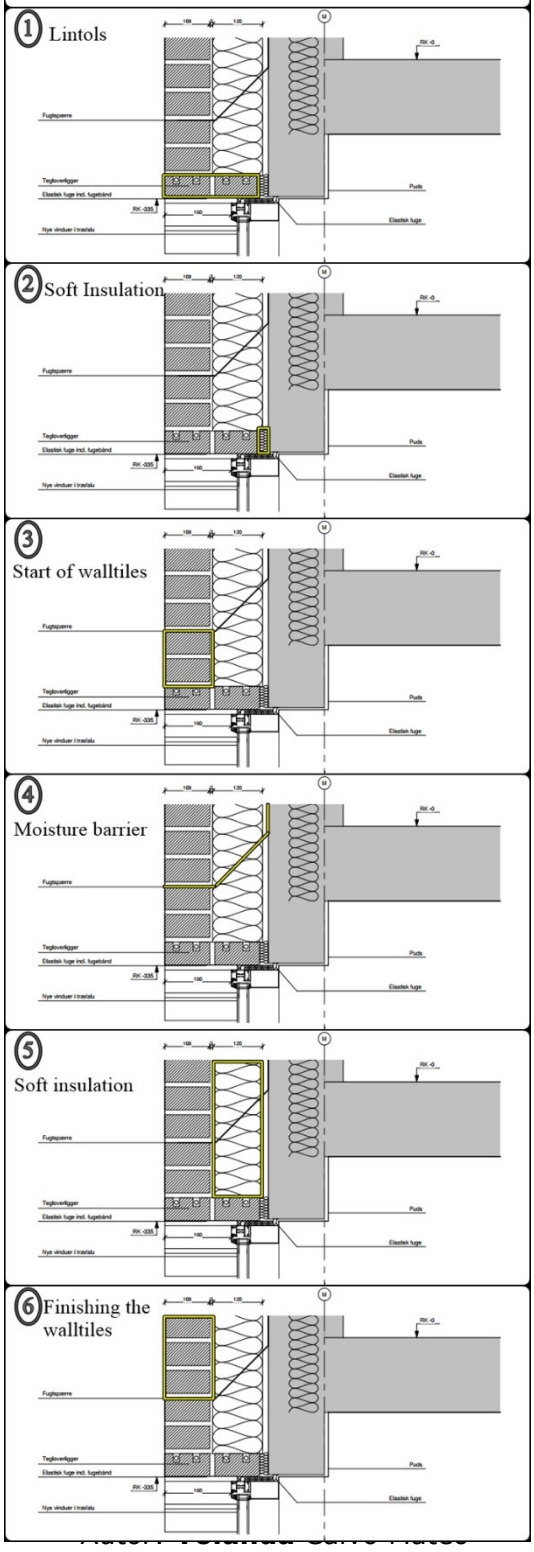


A 607 Plint

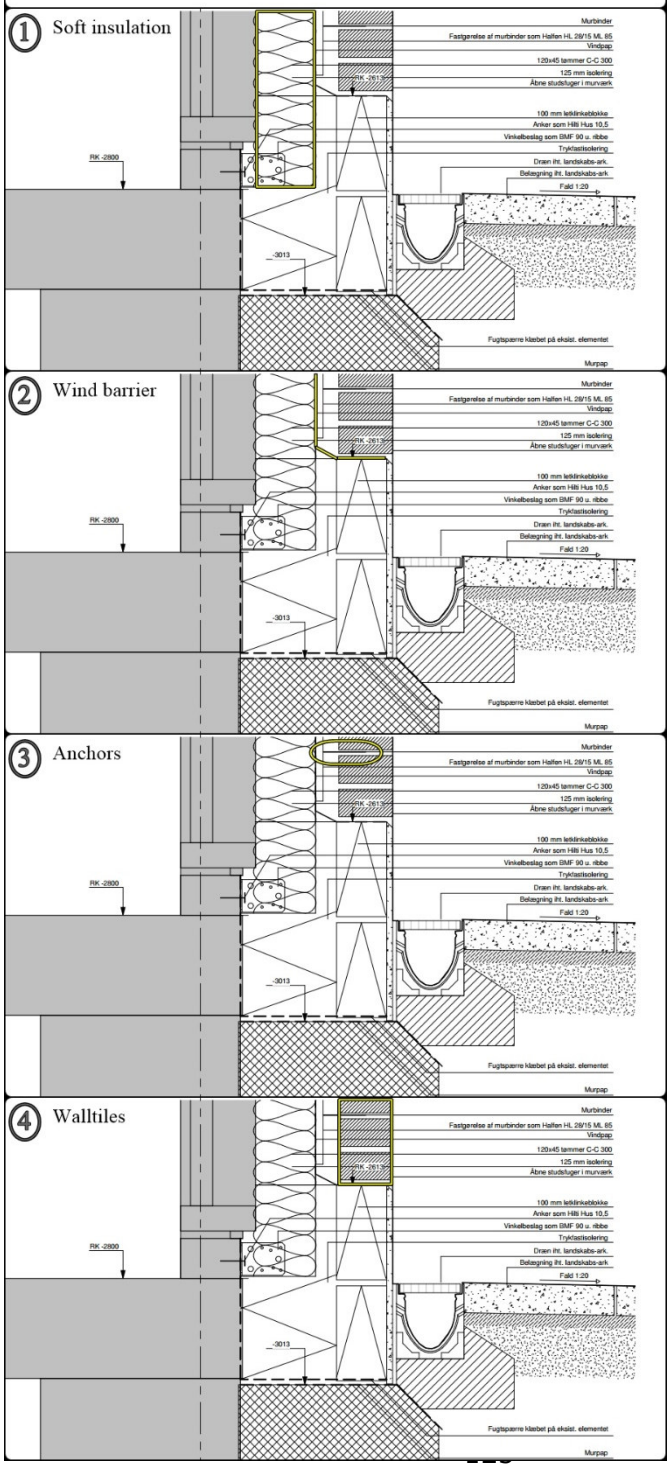


Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

A 602
Facade



A 607
Facade



4.4.1.4. Working time schedule

Staircase

		Activity	Total price (DKK)	Price of manhour	Price 1h	Manhours	
			a	0,6	350	c/b	
	Block 10	Parterre	9966,9	5980,14		17,09	
		1st floor	6468,9	3881,34		11,09	
		2nd floor	6468,9	3881,34		11,09	
		3rd floor	6468,9	3881,34		11,09	50,35
	Block 12	Part,1-2-3 floor	29373,6	17624,16		50,35	
	Block 14	Part,1-2-3 floor	29373,6	17624,16		50,35	
	Block 16	Part,1-2-3 floor	29373,6	17624,16		50,35	

	total hour	activity hour	hour/day	days	workers	
Block 10		17,09	7,4	2,31	2	1,15
		11,09	7,4	1,50	2	0,75
		11,09	7,4	1,50	2	0,75
		11,1	7,4	1,50	2	0,75
Block 12	50,35	50,35	7,4	6,80	2	3,40
Block 14	50,35	50,35	7,4	6,80	2	3,40
Block 16	50,35	50,35	7,4	6,80	2	3,40

17,00

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Parterre

	Activity	Total price (DKK)	Price of manhour	Price 1h	Manhours	
		a	0,6	350	c/b	
Block 10	Casting arround stealbeams	5690,58	3414,35		9,76	
	Plastering of reveals	10630,73	6378,44		18,22	
	Closing and cleaning	1050,23	630,14		1,80	
	Repair floortiles	4699,9	2819,94		8,06	37,84
Block 12		22071,44	13242,86		37,84	
Block 14		22071,44	13242,86		37,84	
Block 16		22071,44	13242,86		37,84	

		total hour	activity hour	hour/day	days	workers	
Block 10	Casting arround stealbeams + plaste-ring of reveals	9,76	7,4	1,32	2,0	2	1
	Plastering of reveals	18,22	7,4	2,46	3,0	2	2
	Closing and cleaning	1,80	7,4	0,24	1,0	2	
	Repair floortiles	8,06	7,4	1,09	1,0	1	1
Block 12		37,84	7,4	5,11	7,0	2	4
Block 14		37,84	7,4	5,11	7,0	2	4
Block 16		37,84	7,4	5,11	7,0	2	4

1-2-3ª floor	Activity	Total price (DKK)	Price of manhour	Price 1h	Manhours	
		a	0,6	350	c/b	
Block 10	Construction of aerated concrete internal walls	21148,73	12689,24		36,25	
	Casting arround stealbeams	7446,93	4468,16		12,77	
	Plastering of reveals	477,92	286,75		0,82	
	Wet room membrane to walls and wall tiles	88652,41	53191,45		151,98	
	New screed in utility rooms	57354,27	34412,56		98,32	
	Wet room membrane to floor and floor tiles (bathrooms)	34650,21	20790,13		59,40	359,54
Block 16		209730,47	125838,28		359,54	

		total hour	activity hour	hour/day	days	workers	
Block 10	Construction of aerated concrete internal walls	36,25	7,4	4,90	5,0	2	
	Casting arround stealbeams + plastering of reveals	12,77	7,4	1,73	2,0	2	
		0,82	7,4	0,11			
	Wetroom membrane to walls and walltiles	151,98	7,4	20,54	21,0	3	
	New screed with falls to gulli in bathrooms	98,32	7,4	13,29	14,0	3	
	Room membrane floor and floortiles	59,40	7,4	8,03	8,0	2	20
Block 16		359,54	7,4	48,59	49,0		20

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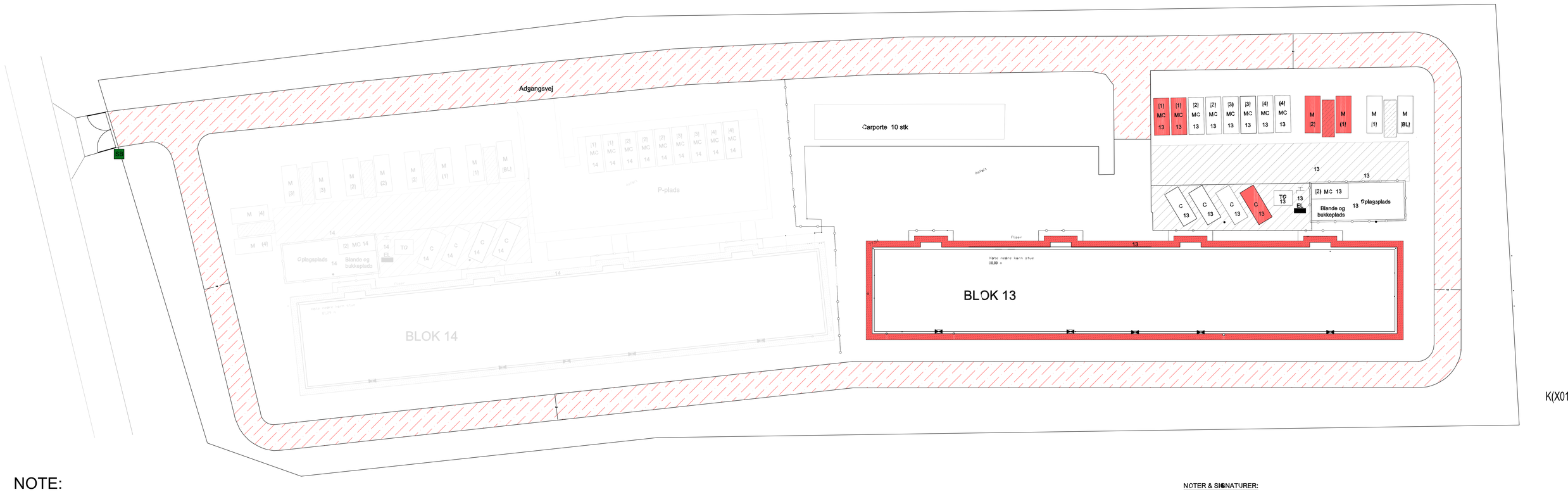
1-2-3ª floor	Activity	Total price (DKK)	Price of manhour	Price 1h	Manhours	
		a	0,6	350	c/b	
Block 12	Construction of aerated concrete internal walls	40768,87	24461,322		69,89	
	Casting arround stealbeams	12073,67	7244,202		20,70	
	Plastering of reveals	419,63	251,778		0,72	
	Wet room membrane to walls and wall tiles	136276,36	81765,816		233,62	
	New screed in utility rooms	56641,46	33984,876		97,10	
	Wet room membrane to floor and floor tiles (bathrooms)	34219,57	20531,742		58,66	480,68
Block 14		280399,56	168239,736		480,68	

		total hour	activity hour	hour/day	days	workers	
Block 12	Construction of aerated concrete internal walls	69,89	7,4	9,44	10,0	2	
	Casting arround stealbeams + plastering reveals	20,70	7,4	2,80	3,0	2	
		0,72	7,4	0,10			
	Wetroom membrane to walls and walltiles	233,62	7,4	31,57	32,0	3	
	New screed with falls to gulli in bathrooms	97,10	7,4	13,12	14,0	3	
	Room membrane floor and floortiles	58,66	7,4	7,93	8,0	2	27
Block 14		480,68	7,4	64,96	65,0	27	

Outside area	Activity	Total price (DKK)	Price of manhour	Price 1h	Manhours
		a	0,6	350	c/b
	Outside area	137320,89	82392,534		235,41

4.4.2. Preparing activities

4.4.2.1. Building site
4.4.2.2. Manning and machinery plan



NOTE:

ACCESS

External access and transport of materials and equipment from the public road Frueløkke.

SITE CABINS

Max. workers on site at the same time: 16 workers

According to security regulation, minimum needed:

- 16 m2 for changing room
- 17 m2 for eating room
- 2 showers
- 2 toilets
- 4 washbasins
- 32 lockers

2 cabins of 8 people with 2 washbasings, 1 shower, 1 toilet, 16 lockers.

MATERIAL

It will be need 2 material container and 1 waste container.

SAFETY PROVISIONS

There shall be available security nets rails and the individual protections like helmets, gloves, boots...

MACHINERY

The small tools for handwork will be stored in the material containers.

SCAFFOLDING

Dimensions: 10x6x1,2m (height x lenght x width)

WINTER PRECAUTIONS (Oct - Mar)

Working areas and material containers covered by a tent, canopie or similar (bricks and plaster must be away from water).

Net for covering the scaffoldings.

ILUMINATION

There are automatically lighting points of 25 lux.

CLEANING

Each team shall clean their work place after them self.

The workers will keep clean the cabins that they are using daily.

NOTER & SIGNATURER:

M	Site cabin		Construction site (fasten with nonwovens + 250 mm gravel)
MC	Material container		Hallways
C	Container disposit		Scafolding
TO	Toilet		Temporaty road
SB	Sign board		Fence
	Masonry works	Oplagsplads	Storage area (nonwovens + 250mm stable gravel)

09.02.2009 AJS MIP

REV DATO TEGN KS SAG 07.877.1 MÅL 1:250

KOLSTRUP
BOLIGFORENING16

BYGGEPLADS UGLEKÆR 2-810-16
BYGHERRE SALUS BOLIGADMINISTRATION

○ ● ○ LANDSKAB

Hundsbæk & Henriksen Rådgivende ingeniør as Karoli negade 3 6000 Kolding T +45 7943 5300
Thing & Waine landskabsarkitekter aps St. Kongens gade 40H 1264 København K T +45 3311 1335

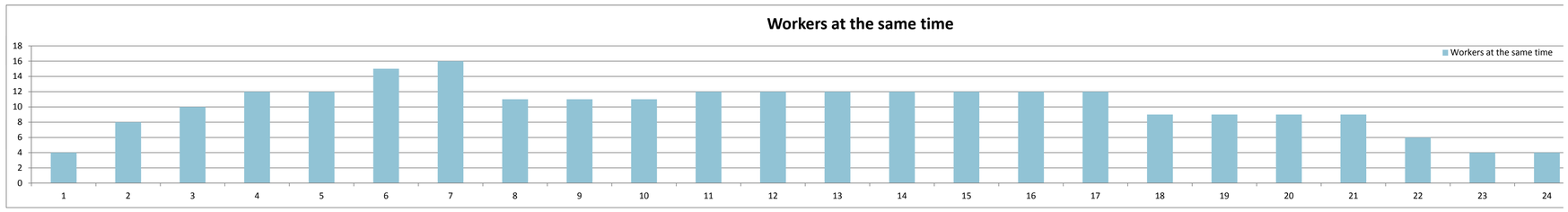
Byggepladsplan NR K(X010

*Modificated by: Yolanda Calvo Mateo Date: 06.2015

Manning and machinery plan

Yolanda Calvo Mateo 06/2015

	duration day of task (working days)	start week number	2 015																2 016																	
			October				November						December						January					February					March									
			07-11	12-18	19-25	26	1	02-08	09-15	16-22	23-29	30	6	07-13	14-20	21-27	28	03	04-10	11-17	18-24	25-31	01-07	08-14	15-21	22-28	29	06	07-13	14-20	21-27						
			1	2	3	4	4	5	6	7	8	9	9	10	11	12	13	13	14	15	16	17	18	19	20	21	22	22	23	24	25						
MANPOWER			*4*	*8*	*10*	*12*	*12*	*15*	*16*	*11*	*11*	*11*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*9*	*9*	*9*	*9*	*6*	*6*	*3*	*4*	*4*	*4*						
Execution of the pedestral and plinth plaster at facades and gables	15																																			
Bricking outer leaf of facades and gables	36	16								8																										
		15							5	7																										
		14							4	6																										
Installation of terrazo in stairwell	21	13							3	5																										
		12				2	2	3	2	4					12	12	12	12	12	12	12															
		11				1	1	2	1	3	8	8	11	11	11	11	11	11	11	11	11															
Parterre level	21	10			2	2	1	2	2	7	7	10	10	10	10	10	10	10	10	10																
		9			1	1	2	1	1	6	6	9	9	9	9	9	9	9	9	9	9	9	9	9												
		8		4	4	4	1	2	2	2	5	5	8	8	8	8	8	8	8	8	8	8	8	8												
Floors	82	7		3	3	3	2	1	1	1	4	4	7	7	7	7	7	7	7	7	7	7	7	7												
		6		2	2	2	1	6	6		3	3	6	6	6	6	6	6	6	6	6	6	6	6	6											
		5		1	1	1	5	5	5		2	2	5	5	5	5	5	5	5	5	5	5	5	5	5											
Outside areas	8	4	4	4	4	4	4	4	4	4	1	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4	4						
		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3						
		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2						
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
MACHINERY																																				
Scaffolding																																				
Mixer																																				
Cutting table																																				



4.4.3. Quality assurance

4.4.3.1. OA quality

The following chapter shows some examples on Quality-goals, and how they should be implemented and have a consequence in terms of politics and procedures. The examples are imagined, but are based on experience from elaboration of Quality-goals in similar companies.

The examples are made to demonstrate how a Quality-system can be designed and documented, but are not a complete Quality-Handbook.

The examples describe a system divided up into three levels.

Level 1: Description of the company, Quality-goals, politics and organization with description of responsibilities and rights...

Level 2: Procedures / company-habits.

Level 3:Quality-Assurance Handbook for a specific project.

Part 1 Goal and politics

Description of the company

Quality-goals

Environmental goals

Organization

Job descriptions

Part 2 Procedures

Graphic overview

Management of documents

Elaboration of Quality- and environmental plans

Process scrutinity and

Project scrutinity

Management of drawings and changes of drawings

Selection of suppliers and purchase

Information to staff

Delivery control

Process control

Final control

Repairing defects and defiencies

Inspection and maintenance of the system

Environmental goal, environmental objective and environmental-action-programme

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

THE COMPANY

DESCRIPTION OF THE COMPANY

Navn: The contractor

Adress xxxxxx

The contractor A/S execute all type of constructionswork based on main- or tradecontracts. The company is established in 19xx by master carpenter Jens Peter as a private company including a small machine shop, which was producing windows and doors. The company was in 19yy reorganized to a family owned limited company simultaneously with participating first in individual trade contracts and later also main contracts. The company participate in public and selected tenders and construct buildings by own means.

This Q.A.Handbook is elaborated by Contractor Ltd. and published in a registered part 1 and an unregistered edition part 2. The registered edition is numbered, and revisions will be sent to the owners of the Q.A. Handbook according to a distributionlist. The registered edition is for internal use at Quality- trade Ltd. The unregistered edition is sent out to costumers, authorities etc. in connection with prequalifications and will not be part of the ongoing revision.

Date:

Managing Director Contractor Ltd.

QUALITY GOAL

It is the politic of Contractor Ltd. to deliver buildings and civil works of good workmanship quality corresponding with the expectations of our costumers. The requirements this politic put to the company and the employees, make it necessary to follow the guidelines, stated in the following Q.A. Handbook. The Handbook shall therefore be known and accepted by all employees in the company. The Q.A. Handbook accounts for our Quality politic, describe the organization of the company including the procedures and company habits, which are used to ensure the fulfilment of the Quality politics.

It is the declared goal of the company to appear as a Quality-concerned company, executing the trades at a workmanship level, which in all aspects, fullfill the costumers expectations, and as a minimum fullfill the demands set by law at any time including the departmental order regarding Quality assurance 2001. All trades are executed with due consideration regarding environmental impact, work environment (Safety and Health) and usage of resources including handling of waste.

The usage of substances, harmful for environment, shall be limited, just as noise- and dustpollution for other workers on the trade including neighbours to the building site. The company have implemented a Quality Management system which is documented in the following Q.A. Handbook that is known and used by all employees in the company.

The handbook is divided up in 3 independent parts.

Part l contains goal and politics, handed out free and will not be maintained at the individual owner.

Part 2 contains a documentation of the companys procedures. It is numbered and not for handing out. It will also contain certain forms and other aids for the execution of Quality Management.

Part 3 which is elaborated for the individual trade, and is for the clients disposal. This part will be maintained according to need.

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

POLITICS

Services

A good and satisfactory quality for the client is a crucial competition factor for the company and by that, the survival of the company. Therefore all trades have to go through a complete scrutinity and client's important Quality demands and eventually environmental demands have to be clearly and unambigious agreed. The trade manager shall during the execution supervise fulfilment of all agreements. The responsible person shall ensure an acceptable solution for the company and that execution can be done in the agreed time, before agreements for tasks are made.

- Following are pre conditions for the company to ensure delivery of the right Quality at any time,
- That the requested Qualitydemands to the services of the company are covered through a systematic Quality management in all levels from marketing to delivery,
- That feed back from clients are collected and elaborated,
- that the client allways get what have been promised in the agreed time corresponding with specifications,

Based on the Quality goal, the list of common known Quality problems and a general wish for Quality improvements, the director elaborate specific Quality objectives which are measureable. The director elaborates a plan of action for the individual Quality objective, which as a minimum contains:

- the actual Quality objective divided in measurable intermediate aims
- who is responsible for the individual intermediate aim
- time schedule with intermediate aims
- planned moment for completion of the Quality objectives
- how the Quality objective are achieved (methods, equipment, new work instructions)

criterias for evaluation of achievement of the Quality objective (e.g. method for measurements).

Purchase.

Before ordering, an assessment of the suppliers ability and will to fullfill our demands is needed, to ensure usage of the right materials in the required Qualitylevel. All materials have to be controlled according to controlplan for delivery control, when receiving at site.

Staff education

All staff members of the company shall have a possibility to participate in courses or get job training within their field of work. Managing staff and key persons have an obligation to keep up dated with the technological development in their field of work.

Good Quality is produced by motivated and professional skilled staff, that the Contractor Ltd. wishs to attract and maintain.

Environmental impact

It is the politic of the company to limit the energy consumption of installations and transport.

Quantities of waste shall be reduced by a better usage of materials, and the waste shall be sorted out to ensure maximum recycling. The usage of substances harmful to the environment shall, if possible, be reduced by replacing with other less dangerous substances. The company aims to improve environmental efforts by up dating the detailed environment objectives. The environment objectives and their implementation status are communicated to the staff simultaneous.

The director formulates a environmental goal based upon the environmental politic of the company, the possible environmental impact caused by the implementationprocess including economy and operationconditions of the company. The director elaborates a list with normal occurring environmental impacts. The director elaborates specific measurable environmental objectives, which are based on the environmental goal and the list of normal occurring environmental impacts. The director elaborates an environmental plan of action for each environmental objective, which as a minimum contain:

- the actual environmental objective
- who is responsible
- time schedule with intermediate aims
- planned moment for completion of the environmental objectives
- how the environmental objective are achieved (methods, equipment, new work instructions)

criterias for evaluation of achievement of the environmental objective (e.g. method for measurements).

Clientcontact.

It have to be ensured when entering into agreements, by a complete analyze that the client's need and expectations to the executed work will be fullfilled, that his requirements get fullfilled including needed corrections of his expectations.

All enquiries from the client regarding defects and defiencies of executed work are replied with a proposal for solving the problem within 5 days from receiving the enquiry.

Selection of sub-contractor.

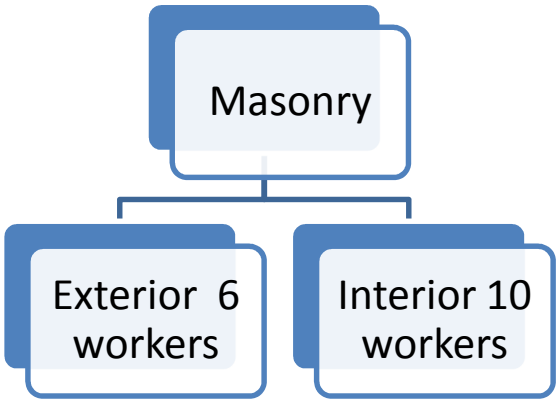
Sub-contractors and suppliers shall serve the company the best they can, in business and quality. This means:

- that we have to select confident sub contractors and suppliers in which we believe can execute the project regarding Finance and Quality and can fullfill the requirements in the project.
- That we shall consider and treat our sub contractors and suppliers as equal collaborators.

That disputes shall be settled by negotiations and not in court.

ORGANIZATION

It is emphazised that the individual effort has an influence on both the quality of the executed work and the impact on the environment, and therefore the employee should know her/his rigths and duties, included the demands to the executed work. The management of the individual functions is responsible for information and education of the employees needed to fullfill these demands. The director has the overall responsibility for an effective Quality- and Environmental Management, which fullfill the demands in the Handbook and is liable to the authorities.



FUNCTION DESCRIPTIONS

Director: Alfonso Bermúdez

Project manager: Yolanda Calvo

Site manager: Borja Escanero

Foreman: Nuria Mateo

Calculation: Salvador Calvo

Purchase: Clemente Mateo

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

PROCEDURES

CONTENT:

DISTRIBUTION LIST

WORDLIST

PROCEDURES:

MANAGEMENT OF DOCUMENTS

ELABORATION OF QUALITY- AND ENVIRONMENTAL PLANS

PROCESS SCRUTINITY

PROJECT SCRUTINITY

MANAGEMENT OF DRAWINGS AND CHANGES OF DRAWINGS

SELECTION OF SUPPLIER AND PURCHASE

INFORMATION TO EMPLOYEES

RECIEVING CONTROL

PROCESS CONTROL

FINAL CONTROL

REPAIRING DEFECTS AND DEFIENCIES

INSPECTION AND MAINTENANCE OF THE SYSTEM

MANAGEMENT OF DOCUMENTS

Goal:

- Ensure that all relevant documents are accessible and retrieveable.
- Ensure that all agreements are registred and communicated to the relevant colleagues of the project.
- Ensure that only valid editions of documents are on the working places.
- Ensure that environmental enquiries are registred

Validity:

- All projectspecific documents and agreement-notes.
- All documents used for management of assignments. (controlschedules, paradigm for letters, work instructions etc.)
- Relevant legal demands and provisions.
- Enquiries in writing regarding environment and work safety.

Responsibility:

The director has the responsibility, that all relevant documents are registred and that the procedures are followed.

The calculator has the responsibility for: assignment of project case numbers, numbers for internal documents and, are registering internal documents.

Case responsible project manager are registering caserelevant documents and maintains lists of documents (drawinglists).

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Background:

- Approval and issue of documents and data.
- Environmental management documentation
- Staff Handbook

APPROACH:

All enquiries or enquiries regarding new work-assignments are registered on form xx, which are given a consecutive number. The case is given a number as soon as priceestimation or participation in a tender is agreed and decided. All agreements concerning deviations from the project are registered on agreement-note xxx, which are issued with date and signature. All changes, which deviate from the projectmaterial, are registred on deviation-note, issued with casenumber, date, serial number and signed by project manager.

Information regarding new laws and departmental orders is achieved from organization/subscription.

Enquiries regarding environmental conditions are handled by the director and all enquiries in writing are replied in writing.

DOCUMENTS:

- Drawinglists
- Documentoverviews

ARCHIVE:

- Tendermaterial is filed in calculationdepartment
- Productionrelevant documentation, including existing laws and departmental orders, are filed in trade department.
- Casespecific material is filed in casefile under the case number.
- Environmental enquiries and replys are filed in a seperate file by date.

ELABORATION OF QUALITY ASSURANCE

Goal:

- Document to the client, which Qualitymanagement- and environmental management activities are used at the case.
- Inform employees about, which control measures are agreed with the client.

validity:

- Trades, where there is demand for Quality Assurance.
- Environmental management activities executed for all trades.

Responsibility:

Project manager.

BACKGROUND:

Approach:

The project manager looks through the projectmaterial after taking over the trade. The project manager elaborates Q.A.Handbook based on demands to Quality Assurance and companys own environmental goals, which contain information regarding: organization of the case, approach at process scrutinity, information of employees and finished controlplans. The project manager informs the subcontractors about demands for Q.management and Q.A. including environmental management, when contracting.

The project manager describes how environmental action plans for each trade are specified in demands in the individual trade. Project manager's assessment of the relevance of the environmental impacts, are considered and if there are new possible environmental impacts. In case of specific environmental demands from the client, they are incorporated. The demands to the individual trade are forwarded to the site in the Quality-plan.

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PROCESS SCRUTINITY

Goal:

Ensure that all demands are documented. Clarify comprehensibility problems regarding the project. Uncover conditions, which may lead to failure, or are particular risky or difficult to execute. Uncover conditions which may lead to environmental impacts. Prevent emergence of work environmental problems during the execution.

Validity:

All projects and contracts with clients. The scrutinity is documented at projects where it is agreed and project Scrutinity meeting is executed with the client (representatives of the client), which is documented by minutes from meeting.

Responsibility:

Project manager of trade

BACKGROUND:

Town and Dwelling agency guidance

Approach:

During the bidding, eventually ambiguities and quality-relevant problems in the project are registered. These are to be solved as far as possible with the client by the calculator, before the bid is filed. Project manager and foreman and eventual calculator shall participate in the process scrutinity. Critical work operations are identified during the process scrutinity and controlplans are elaborated for delivery- and process control, which account for:

- What to control?
- Who will do it?
- Where in the process?
- How often?
- How?
- Which documentation, is elaborated for the control.

The possible environmental impacts are scrutinized during the process scrutinity. The company's standardlist with environmental impacts which normally occurs, are used as starting point. If the process scrutinity point out other possible environmental impacts, which are not on the list or indicate that some from the list are of no interest for the trade, this is communicated to the director for lay-out of environmental goals for the trade (see procedure 2.2.13). It is recorded in the minutes from meeting, whether more or less possible environmental impacts are registered than from the standard list. After acceptance, a process scrutinity is executed and project scrutinity meetings with the client are held as agreed. For the project scrutinity meeting, a quality plan and proposal for a control plan should be elaborated.

Minutes from the process scrutinity provide a basis for the project scrutinity meeting. Contract manager follow up, that eventual problems are solved e.g. at follow up meeting.

DOCUMENTS:

Minutes of meetings

FILING:

In casefolder

PROJECT SCRUTINITY MEETING

Goal:

- Ensure that intentions in the project are understood.
- Ensure that the available drawingmaterial is sufficient.
- Ensure that the project is practicable and feasible in line with legislation in force.

Validity:

All projects with demands for Quality assurance.

Responsibility:

Contract manager

Approach:

The participants are called in by request of the Company with a minimum of 14 days notice. Eventual ambiguities and Quality-relevant problems are registered. Timeframe for solutionproposals are determined.

Q.A. Handbook is sctrutinized and controlprocedure determined

Procedure for interim certificates and agreement notes are determined.

Participants: Contract manager and eventually responsible fitter and also client and/or client's representative.

Documentation:

Minutes from project scrutinity.

Filing:

In casefolder

MANAGEMENT OF DRAWINGS AND CHANGES IN DRAWINGS

Goal:

Ensure that only valid drawings are used by execution of the work.

Ensure that valid drawings are at the building site at any time.

Ensure that invalid drawings are removed from the place of usage.

Ensure that changes are approved by contract manager before execution

Validity:

All trades

RESPONSIBILITY:

Contract manager

BACKGROUND:

Approach:

All changes have to be documented and stated clearly by marking of change and date of the change in the document. Changed documents have to be sent to the contract manager at the adress of the company. Contract manager have to approve all changes and distribute the documents to the relevant places of usage (building site). The foreman bring about changes further to workplaces and withdraw invalid drawings, which is marked clearly with stamp or in another way, and also placed in a special archive.

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SELECTION OF SUPPLIERS AND PURCHASE

Goal:

Ensure that all used materials fullfill Quality- and environmental demands for the project and the company, and that requested documentation are present.

Validity:

Delivery of materials, which are built in, or have an impact on the Quality.

Responsibility:

Contract manager

BASIS:

Approach:

Possible suppliers enquire information regarding, which informative labelling, testcertificates, certificates and other Quality- and environmental-relevant documentation, they can deliver with the products. Contract manager ensure, that suppliers understand eventual environmental demands. The sub-suppliers ability and will to keep the agreed Quality- and environmental-level is assessed eventually by a visit to the Company. A suppliers list is elaborated from where suppliers are selected to projects. The list shall be on the building site.

EDUCATION AND INFORMATION TO EMPLOYEES

Goal:

- Ensure that own employees and sub-contractors knows work-methods and Quality- and environmental demands in theproject.
- Ensure that own employees have relevant education.

VALIDITY:

Information: Relevant operations with particular emphasis on operations where there is special Quality- or environmental demands.

Education: own employees,

RESPONSIBILITY:

Information. Foreman.

Education: Director.

APPROACH:

By employment of new employees, the director looks through their education so far and discuss the need for further education together with the employee. New employees are informed about the system for Quality Management and Environmental Management and about the company's Quality- and Envitonmental goal. The employee's obligations regarding Quality and Environment and the importance of acting in line with the procedures are looked through. The director draw up a basic file on each employee, where time for information regarding the system are registered together with the education so far and planned education. The need for education are revised once a year as a minimum. The foreman instruct verbally by starting up an operation or by run in of a new team on the building site. In special occasions, the foreman makes a work sketch, or written instruction is handed out, e.g. user manual or Byg-Erfa sheets.

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DELIVERYCONTROL

Goal:

- Ensure that used materials fullfills the demands in the project.
- Ensure that materials are without considerable defects and defiencies.
- Ensure that complains regarding deliveries with defiencies are handled i due time.
- Ensure that the requested Quality documentation are procured.

VALIDITY.

All deliveries

Responsibility:

Foreman.

APPROACH:

The foreman order deliveries according to the project- or materialelist at the suppliers on suppliers list. All deliveries are controlled for: transport damages, correspondance between delivery note, ordering list, recieved materials and marking. Delivery note is signed. The foreman make complains to the supplier in case of deviations and decide whether the delivery shall be sorted out or returned. If the defect has an influence on the time schedule or the quality of the executed work, the contract manager are informed and will decide what to do.

PROCESSCONTROL

Goal:

- Ensure that all executed work are according to project demands.
- Ensure that all work is executed craftsmanlike.
- Ensure that all work fullfill the company's Quality norms.
- Ensure that all work fullfill the company's environmental goals for the individual project.
- Ensure that work is executed according to legislation in force.

VALIDITY*:*

All works.

Processcontrol regarding Quality are documented by controlplans and control schedules, where it is requested in contrakt or agreed with the client.

Process control regarding environment are documented by control plans and control schedules at all works.

RESPONSIBILITY:

Contract manager has the responsibility for planning and follow up.

Foreman has have the responsibility for practical execution.

A substitute is pointed out at control activity.

BACKGROUND:

Approach:

Deviations, which have an influence on the Quality of the final work or on fulfilment of environmental goal for the project, are reported to the contract manager, who will decide the consequences of the deviation, and determine necessary provisions. The client shall be informed about all deviations and approve all deviations, which are not repaired and which have an influence on the quality of the completed work. A deviation report is elaborated, which have to be approved by the client.

FINAL CONTROL

GOAL:

- Ensure that all completed works fulfil Quality demands from the project and politics from the company.
- Ensure that eventual defects and defiencies are repaired, before handing over to the client.
- Ensure that the company's goal regarding delivery of buildings without defects and defiencies are met.

Validity:

All projects

Responsibility:

Contract manager

BACKGROUND:

Approach:

Contract manager goes through the trade with foreman, eventual defects are registered, and repairing is initiated immediately. Controldocumentation, certificates and other agreed documentation is examined and arranged for handing over to the client. File with documents are signed by contract manager and foreman as receipt, that the contract part is ready for handing over.

Documentation:

File with quality relevant documents, dated and signed by foreman and contract manager.

FILING:

In casefile

REPAIRING OF DEFECTS AND DEFIENCIES

GOAL:

Prevent unintended usage of deviating materials or services in the completed building.

Clarify eventual deviations internal, and where it is relevant with the client orsupplier

VALIDITY:

All works

Responsibility:

Foreman

BACKGROUND:

Approach:

Every material, which deviate from demands in the project, have to be returned or sorted according to agrement with supplier or used after documented permission from the client. Rejected deliveries have to be marked clearly until decision for use or scrap is taken. Materials, which are sorted out and scrapped, have to be removed from the building site. Deviating services have to be demarcated, until the deviation is corrected or accepted by the client, and client's accept is doicumented.

DOCUMENTS:

Control schedules

Minute from final control scrutinity

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4.4.3.2. Process control plan

PROCESCONTROLPLAN:

Case: KOLSTRUP HOUSING ASSOCIATION..... Nr.:..... Rev.:.....

Activity	Control by	Control	Control method	Godkendelses-criteria	Documentation of control	Remarks
2.2-4.1 Execution plinth& plaster						
Bitumen paint	Y.C	Put out right	Visual. Test	Clean surface	Control form Picture	OK
Moisture barrier	Y.C	Put out right	Visual. Test	Clean surface	Control form Picture	OK
Hard insulation	Y.C	Put out right	Visual Photo	No cold bridges and damage visible	Control form Picture	OK
Thermoblocks	Y.C	Put out right	Visual Photo	No damages	Control form Picture	OK
Mortar	Y.C	Correct mixture	Test	Expected quality	Control form Picture	OK
v						
2.2-4.2 Bricking outer leaf of facades and gables:		If it is well executed	Visual. Plan		Control form Picture	
Soft insulation	Y.C	Put out right	Visual. Photo	No cold bridges and damage visible	Control form Picture	OK
Wind barrier	Y.C	Put out right	Visual. Photo	No damage visible	Control form Picture	OK
Wall ties	Y.C	Set up in line	Visual	Placed correctly	Control form Picture	OK
	Y.C	Right type and size	Visual	Width, height, length	Control form Picture	OK
	Y.C	Put up straight and clean	Visual		Control form Picture	OK
Anchor	Y.C	Good embedding	Test	Expected quality	Control form Picture	OK
Mortar	Y.C	Correct mixture	Test	Expected quality	Control form Picture	OK

4.4.3.3. Receiving control plan

Company: Cofidis firm

Handbook
For project and construction management

RECIEVING CONTROL PLAN:

Case: Kolstrup Housing association Nr.: Rev.:

Subject: Masonry	Controlled by	Frequence	Method	Accept criterias	Documentation of control	Comments
2.2-4.1	Y.C	1 por week	Vipsual Tests		Control form Pictures	
2.2-4.2	Y.C	1 por week	Visual Tests		Control form Pictures	

4.4.4. Health and Safety

4.4.4.1. Environment and safety

Introduction:

The following chapter shows some examples on Health and safety-goals, and how they should be implemented and have a consequence in terms of politics and procedures. The examples are imagined, but are based on experience from elaboration of Health and safety-goals in similar companies.

The examples are made to demonstrate how a Health and safety-system can be designed and documented, but are not a complete Health and safety-Handbook.

The examples describe a system divided up into three levels.

Level 1: Description of the company, Health and safety-goals, politics and organization with description of responsibilities and rights...

Level 2: Procedures / company-habits.

level 3:Health and safety-Assurance Handbook for a specific project.

PART 1 THE COMPANY

DESCRIPTION OF THE COMPANY

Navn: The contractor
Adress xxxxxx

The contractor A/S execute all type of constructions work based on main- or trade contracts. The company is established in 19xx by master carpenter Jens Peter as a private company including a small machine shop, which was producing windows and doors. The company was in 19yy reorganized to a family owned limited company simultaneously with participating first in individual trade contracts and later also main contracts. The company participate in public and selected tenders and construct buildings by own means.

This PSH. Handbook is elaborated by Contractor Ltd. and published in a registered part 1 and an unregistered edition part 2. The registered edition is numbered, and revisions will be sent to the owners of the PSH. Handbook according to a distribution list. The registered edition is for internal use at Health and safety- trade Ltd. The unregistered edition is sent out to costumers, authorities etc. in connection with prequalification's and will not be part of the on going revision.

Date:

Managing Director Contractor Ltd.

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

HEALTH AND SAFETY GOAL

It is the politic of Contractor Ltd. to deliver buildings and civil works of good workmanship Health and safety corresponding with the expectations of our customers. The requirements this politic put to the company and the employees, make it necessary to follow the guidelines, stated in the following Q.A. Handbook. The Handbook shall therefore be known and accepted by all employees in the company. The Q.A. Handbook accounts for our Health and safety politic, describe the organization of the company including the procedures and company habits, which are used to ensure the fulfilment of the Health and safety politics.

It is the declared goal of the company to appear as a Health and safety-concerned company, executing the trades at a workmanship level, which in all aspects, fulfilled the costumers expectations, and as a minimum fulfilled the demands set by law at any time including the departmental order regarding Health and safety assurance 2001. All trades are executed with due consideration regarding environmental impact, work environment (Safety and Health) and usage of resources including handling of waste.

The usage of substances, harmful for environment, shall be limited, just as noise- and dustpollution for other workers on the trade including neighbours to the building site. The company have implemented a Health and safety Management system which is documented in the following Q.A. Handbook that is known and used by all employees in the company.

The handbook is divided up in 3 independent parts.

- Part l contains goal and politics, handed out free and will not be maintained at the individual owner.
- Part 2 contains a documentation of the company's procedures. It is numbered and not for handing out. It will also contain certain forms and other aids for the execution of Health and safety Management.
- Part 3 which is elaborated for the individual trade, and is for the clients disposal. This part will be maintained according to need.

1.3 POLITICS

Services

A good and satisfactory Health and safety for the client is a crucial competition factor for the company and by that, the survival of the company. Therefore all trades have to go through a complete scrutiny and client's important Health and safety demands and eventually environmental demands have to be clearly and unambiguous agreed. The trade manager shall during the execution supervise fulfilment of all agreements. The responsible person shall ensure an acceptable solution for the company and that execution can be done in the agreed time, before agreements for tasks are made.

Following are pre conditions for the company to ensure delivery of the right Health and safety at any time,

- That the requested Health and safety demands to the services of the company are covered through a systematic Health and safety management in all levels from marketing to delivery,
- That feedback from clients are collected and elaborated,
- that the client always get what have been promised in the agreed time corresponding with specifications,

Based on the Health and safety goal, the list of common known Health and safety problems and a general wish for Health and safety improvements, the director elaborate specific Health and safety objectives which are measureable. The director elaborates a plan of action for the individual Health and safety objective, which as a minimum contains:

- the actual Health and safety objective divided in measurable intermediate aims
- who is responsible for the individual intermediate aim
- time schedule with intermediate aims
- planned moment for completion of the Health and safety objectives
- how the Health and safety objective are achieved (methods, equipment, new work instructions)
- criteria's for evaluation of achievement of the Health and safety objective (e.g. method for measurements).

Purchase.
Before ordering, an assessment of the suppliers ability and will to full fill our demands is needed, to ensure usage of the right materials in the required Health and safety level.

Staff education
All staff members of the company shall have a possibility to participate in courses or get job training within their field of work. Managing staff and key persons have an obligation to keep up dated with the technological development in their field of work.

Good Health and safety is produced by motivated and professional skilled staff, that the Contractor Ltd. wish's to attract and maintain.

Environmental impact
It is the politic of the company to limit the energy consumption of installations and transport.

Quantities of waste shall be reduced by a better usage of materials, and the waste shall be sorted out to ensure maximum recycling. The usage of substances harmful to the environment shall, if possible, be reduced by replacing with other less dangerous substances. The company aims to improve environmental efforts by updating the detailed environment objectives. The environment objectives and their implementation status are communicated to the staff simultaneous.

The director formulates a environmental goal based upon the environmental politic of the company, the possible environmental impact caused by the implementation process including economy and operation conditions of the company. The director elaborates a list with normal occurring environmental impacts. The director elaborates specific measurable environmental objectives, which are based on the environmental goal and the list of normal occurring environmental impacts. The director elaborates an environmental plan of action for each environmental objective, which as a minimum contain:

- the actual environmental objective
- who is responsible
- time schedule with intermediate aims
- planned moment for completion of the environmental objectives
- how the environmental objective are achieved (methods, equipment, new work instructions)
- criteria's for evaluation of achievement of the environmental objective .

Client contact.
It have to be ensured when entering into agreements, by a complete analyse that the client's need and expectations to the executed work will be fulfilled, that his requirements get fulfilled including needed corrections of his expectations.

Selection of sub-contractor.
Sub-contractors and suppliers shall serve the company the best they can, in business and Health and safety. This means:

- that we have to select confident sub-contractors and suppliers in which we believe can execute the project regarding Finance and Health and safety and can fulfilled the requirements in the project.
- That we shall consider and treat our sub-contractors and suppliers as equal collaborators.
- That disputes shall be settled by negotiations and not in court.

ORGANIZATION

It is emphasized that the individual effort has an influence on both the Health and safety of the executed work and the impact on the environment, and therefore the employee should know her/his rights and duties, included the demands to the executed work. The management of the individual functions is responsible for information and education of the employees needed to fulfilled these demands. The director has the overall responsibility for an effective Health and safety- and Environmental Management, which fulfilled the demands in the Handbook and is liable to the authorities.

Examples on common security provisions/common welfare provisions

	Demands for Health and safety	Who	Period
A. Traffic areas on the site			
1.Access roads to the site	For heavy traffic	Main	Though the entire
2.Parking areas	Area for	Main	Though the entire
3. Access roads from parking	Should be high	Main	Though the entire
4.Temporary site roads	Establishing when	Main	
5. Permanent access roads	The roads have to	Main	Through the entire
6. Permanent access roads	Will be made	Main	At the end of the
7.Gangways and stairs	Described quality	Main	At the end of the
8.Access roads in buildings	Described quality	Main	At the end of the
9.Clearing/cleaning	Shall be at all areas	Main	Through the entire
10.Drainage	Prescription of it's	Main	By the beginning of
11.Snow clearance	When works is	Main	Through the entire
12.Winter precautions	Safety has to be for	Main	At winter
13.Light in traffic areas	Temporary lights	Main	Through the entire
B. Shed area and storage area			
1.Setting up sheds for orkers, foremen,	Placed at building site as soon as	Main contractor	
2.Setting up sheds for changing and bathing	The subcontractors have their own	Main contractor	
3.Setting up toilet cabins	Shall be placed as	Main	
4.Containers for material	Shall be at place	Main	
5.Storage area for	Shall be at place	Main	
6.Tent workshops	Only if it is of need	Main	
7. Containers for separated garbage	As soon as the work starts	Main contractor	
8.Light	Enough for each	Main	
9.Clearing up in shed area	It is each	Subcontractor	

C. Working areas			
1. Fencing of site/signboards	Shall be around the area with attention	Main contractor	
2.Storage area for equipment/materials	Only in sheds	Main contractor	
3.Covering of holes	If necessary	Main	
4. Establishment of handrails	Only if needed	Main	
5. Falling down security roof work			
6.Clearing up in common areas	Everybody that has obligation	Main contractor	
7.Winter covering of main structure and scaffolding	No structural covering	Main contractor	
8.Light in common working areas	Shall be as soon the work starts	Main contractor	
9.Precautions by work acc. To subs 3.4.1	There is a description to look	Main contractor	
10.Soil work	There is a description to look	Main contractor	
D Technical appliances			
1.Cranes and material hoists	Shall be near the site until it´s needed	Main contractor	
2.Lift for persons			
3.Scaffolding			
4.Ventilation			
5.Central extraction of dust and vapours			

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E. **Supplies for site and shed area**			
1.Water and sewage	Proper installation	Main contractor	
2.Electricity with a plan showing main- and group switchboards	Installation that is sufficient	Main contractor	
3.Protection of cables/hanging of cables	Cables shall be protected from	Main contractor	
4.Telephone at site	Mobile phones used	Main contractor	
F. Other			
1.Shielding/closing of to third party	Non authorized traffic is allowed	Main contractor	

3.0 Minimum – table of contents and obligations acc. To rules for construction site's plan for safety and health (PSH)

Table of content	Subject	Schedule	Minimum table of content of PSH and obligations according To situation or player				
			A. Main contractor or client	B. Trade- or subcontractor	C. Larger sites = risk assessment and verbal coordination	D. Executor only regarding particular dangerous activity	E. Small site = verbal coordination
3.0	Table of content of PSH And demands regarding PSH	3.0	Yes.	No.	No.	No.	No.
3.1	Security organisation of the site	3.1	Yes.	Send information to security coordinator concerning own security organisation.	Recommended	Recommended	Recommended.
3.2.1	Site plan	3.2.1	Yes.	Send information to security coordinator concerning own present wishes for arrangement of site and defects on site plan.	Recommended considering planning and coordination of safety and health.	Yes.	No.
3.2.2	Site plan (check list)	3.2.2	Only used as internal checklist.	Only used as internal checklist.	Only used as internal checklist.	Only used as internal checklist.	No.
3.3	Time- and manpower schedule including safety and health	3.3	Yes.	Send information to security coordinator concerning own time- and manpower schedule including safety and health.	Recommended.	Recommended.	No.
3.4.1	Description of existing conditions	3.4.1	Yes.	Send possible information to security coordinator concerning own specifications and missing specifications in PSH.	No	No.	No.
3.4.2	Description of common precautions, included work in common areas and common safety precautions	3.4.2	Yes.		No	Yes	
3.4.3	Description of common welfare precautions	3.4.3	Yes.		No	Yes, particularly concerning special welfare precautions at dangerous activities.	
3.4.4	Description of areas with risk according to assessment and information from the project supervisor	3.4.4	Yes.		No, apply possibly form for risk assessment.	Yes.	
3.4.5	Contingency plan etc.	3.4.5	Yes.		No	Yes.	
3.5	Agenda for start up meetings and safety meetings	3.5	Yes.	No.	Recommended at start up meeting and several contractors working simultaneously.	Yes.	Cuatrumodo abbefale.
3.6	Description of instruction of the employees at the site	3.6	Yes.	Send possibly information to security coordinator regarding instruction of own employees.	No, Verbal instruction is recommended.	Yes.	No, Verbal instruction is recommended.
3.6A	Safety instruction for particular dangerous activity	3.6A	Yes. Security coordinator is coordinating the safety instructions from the individual trade- or subcontractors in the PSH.	Send own security instructions to security coordinator.	No.	Yes. (Security instruction for particular dangerous activity is containing the majority of the above-mentioned information).	No

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Regulations, guidance and good advices	Guidance and good advices
Legislation is "Labour Inspectorate administrative order no. 589" concerning arrangement of construction sites and similar working places and "Labour Inspectorate administrative order no. 576" concerning client's obligations. 1. This table of content for PSH is structured according to legal rules and good practise in the branch. 2. PSH is structured dependent on present situation or role. 3. A Main contractor or client (security coordinator) Security coordinator is responsible for elaboration and maintenance of the PSH for the site. Information is collected from the trade- or subcontractors. Form 3.1 to 3.6 A is used for collection of information. PSH is elaborated according to situation A. Client's security coordinator elaborate and maintain PSH of the site and the main contractor will provide all information from form 3.1-3.6 according to situation A. 4. B Trade- or subcontractors Trade- and subcontractors are obliged to deliver information to the security coordinator.	Trade- and subcontractors can use above-mentioned checklists and forms the other way round to control safety and health on the site. Information to the main contractor or the client is according to situation B. 5. C Larger site = risk assessment and verbal coordination Larger sites is where the volume of the work is exceeding 30 working days and minimum 20 employed simultaneously or 500 man-days. A possible PSH can be elaborated according to situation C. 6. D Employer only regarding particular dangerous activity Employer carrying out particular dangerous activities according to LI-adm. order. Nr. 589 enclosure 1, shall elaborate a PSH. See schedule 3.6 A regarding safety instruction for particular dangerous activity. PSH is elaborated according to situation D. 7. E Small site = Verbal coordination A small site is with maximum 10 employed simultaneously from all employers in the whole building period. Only demand for verbal coordination between the employers. Coordination carried out according to situation E.

3.1 Security organisation on the site

Players:	Profession:	Areas of responsibility	Name, address, telephone, mobile, fax, e-mail	Contact person(s) on the site
Client (C)	Client		Name: Address: Telephone: Fax: Mobile: E-Mail:	
Security coordinator (SC)	Security coordinator	Security meetings, PSH, daily coordination	Name: Address: Telephone: Fax: Mobile: E-Mail:	
Supervision and site management	Site manager	Daily site coordination and supervision	Name: Address: Telephone: Fax: Mobile: E-Mail:	
Project supervisor / consultant	DC Constructions	Project supervision	Name: Address: Telephone: Fax: Mobile: E-Mail:	
Main contractor (MC)	Project manager	Project supervision	Name: Address: Telephone: Fax: Mobile: E-Mail:	
Trade contractor 1	Steel	Steel work	Name: Address: Telephone: Fax: Mobile: E-Mail:	SV: SR:
Trade contractor 2	Masonry	Masonry works	Name: Address: Telephone: Fax: Mobile: E-Mail:	SV: SR:
Trade contractor 3	Concrete	Concrete works	Name: Address: Telephone: Fax: Mobile: E-Mail:	SV: SR:
Trade contractor 4			Name: Address: Telephone: Fax: Mobile: E-Mail:	SV: SR:
Trade contractor 5			Name: Address: Telephone: Fax: Mobile: E-Mail:	SV: SR:
Others			Name: Address: Telephone: Fax: Mobile: E-Mail:	

Legislation, guidance and good advices	Legislation, guidance and good advices
LI-adm. order no. 389 concerning arrangement of sites and similar work places of 22. June 2001. LI-adm. order no. 576 concerning client's obligations of 21. June 2001. LI-adm. order nr. 574 concerning project supervisor- and consultant's obligations etc. of 21. June 2001. LI-adm. order nr. 575 concerning safety- and health work in the companies of 21. June 2001. From the security organisation of the site it shall appear who is responsible for: A. Elaborate and maintain plan for safety and health (PSH), site plan and time- and manning schedule. B. Coordinate the safety work in general and in common areas. C. Demarcate security provisions in common areas e.g. trade contractor responsible for scaffoldings. D. Report the site to LI.	1. Specify the responsible in the space with areas of responsibility with letters A-D. Specify specific areas of responsibilities on site in the space, as e.g. scaffolding, maintenance of access roads etc. 2. Specify trade contractor with activity on the site e.g. demolition, carpenter, sewage, masonry, services, el, roof etc. 3. Specify for all contractors SV and SR. security organisation of the site shall also show subcontractors to trade contractors in space for "others" or "Trade contractors". 4. Contractors on site with minimum 5 men more than 14 working days, shall establish a security group on site consisting of a supervisor (SV) and security representative (SR). Contractors with less than 5 men or duration less than 14 working days shall state contact persons from the company's security organisation. (Supervisor or master or security representative). 5. The client shall appoint a security coordinator at sites with 2 contractors and more than 10 employed simultaneously.
3.2.1 Site plan, insert the site plan here	

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3.2.2 site plan (checklist)

Site areas:	Defects or comments	Respons.	OK	Site areas:	Defects or comments	Respons.	OK
Special risks on the site and existing installations				**Necessary technical installations**			
Power lines in air and in soil	Electrical cables and conduits must be suspended. If they cross access routes and roads, they must be suspended, buried or protected in some other way.	Site manager	ok	Light in common areas and buildings, switchboards and hanging up cables.	The light switches will be placed as close to the entrance as possible. If orientation lighting is necessary but hast not been installed in working areas rooms, it must be possible to switch on work lighting at the entrance to the area or room.	Site manager	ok
Water and sewage	Work with waste water or sewage sludge, you must be vaccinated against tetanus, hepatitis A and polio.	Site manager	ok	Water supply and sewage, including drainage of the site	To prevent damage to water pipes they will be hanging up or buried.	Site manager	ok
District heating and natural gas	Before excavating it is necessary to pay attention to whether there are any installations in the ground. There may be gas pipes, electricity cables or communication cables. Conduits for electricity and pipes for compressed air, gas and water to temporary site installations may be suspended on walls or from ceilings. If they have to be placed on the ground or floor they must be positioned so that nobody can fall over them or damage them.	Site manager	ok	Fencing off the site	Fence off and lock the building site and site huts out of working ours. All buildings should be locked.	Site manager	ok
Contaminated soil, toxic dump and explosives	Examine whether the ground or any part is contaminated and if you found an unknown contaminant the work must be stopped and investigate the contamination.	Site manager	ok	Scaffolding, handrails and other protection against falling by work in heights	Remove discarded scaffolding materials at once.	Site manager	ok
Materials contaminated with abestos	If a plan is needed this would normally be sufficient like e.g by asbestos.	Site manager	ok	Covering of holes	Keep holes for gullies and similar properly covered.	Site manager	ok
Particular dangerous activities. Including specification of closed off areas	Mounting and dismounting of prefebricated concrete elements, normally with a weight of more than 500kg	Site manager	ok	Other			
Other	A messy building site creates a greater risk of accidents, to prevent this keep things clean and tidy.	Site manager	ok	Access conditions and roads on the site	Access to and exits from the site should be separated and clearly signposted. Roads and walkways must be planned and structured to handle the traffic using them at all the times.	Site manager	ok
Welfare provisions and contingency plan				Pedestrians (coming- to and walking in the site), Including temporary roads and walking areas.	There will be temporal roads for vehicles and for pedestrians sidewalks. Keep pedestrian traffic as far away as possible from motor traffic.	Site manager	ok
Shed area, including toilet, washing, Dining, changing etc.	Set up site huts so that parking and storage of materials between the huts is prevented as far as possible. They also have to be sited in places where they are protected from falling materials. Toilets on the building site must normally be connected to the drains and have water flushing.	Site manager	ok	Driving traffic (to- and on the site), including roads for transport of materials, transport and work with technical appliances as e.g. Cranes and hoists.	The roads will be wide enough so vehicles could circulate in both directions without any problem. There will be signs and traffic lights to make the traffic safe.	Site manager	ok
Shed for site management and meeting room	It has to be a meeting room with space enough with table and chairs for 8 people.	Site manager	ok	Access roads in buildings and on the site for persons and materials included stairs, gangways and escape routes.	Hanged a site plan up at the entry to the building site to help people to find their way about. It should be possible to see from the plan where enforcement notices are applicable concerning the wearing of helmets, speed limits, one-way access and similar issues of significance to safety.	Site manager	ok

Contingency plan, including emergency telephone, fire equipment, stretcher, eye rinse etc.	There must be escape routes in at least two directions from all huts. These routes be at least 2m wide and must not be blocked by materials or other items. There must be a telephone on site which employees can use.	Site manager	ok	Parking places and traffic roads to and from the site.	It is a good idea to use the residential roads and parking areas to be constructed as site roads. The temporal roads on the building site must also be built up so that heavy traffic can use them regardless of the weather.	Site manager	ok
Location of personal means for protection	Site huts must have good lighting so that people can find their way about safely.	Site manager	ok	Other.			
Other	The rooms must be well ventilated, lit and insulated, and the temperature must be at least 18°C when they are used. Tools, materials and similar must not be stored in these rooms.	Site manager	ok	**Technical appliances at the site**			
Special working areas at the site				Cranes and mobile cranes	In each individual situation, the crane driver must assess whether he can undertake the lift safely so that neither the gear nor the ground assistant are endangered.	Site manager	ok
Soil works	An experienced person should manage and monitor the excavation work, including the nature of the soil, and make decisions on slopes and the use of shoring devices.	Site manager	ok	Lifts for persons and equipment	Lifting bellow knee height and above shoulder height can be avoided by initially having the objects placed on a trestle or workbench/trolley at a suitable height.	Site manager	ok
Storage of material for the individual contract				Ventilation	In the case of work processes which give off dust, smoke or vapour which are harmful to health, process ventilation is normally established which is exhausted to the outside.	Site manager	ok
Areas for separating and waste included containers	Do not stack materials in such a way that this may topple or otherwise cause a hazard. Only place materials in the locations designed for them. Ensure that the containers are emptied regulary. Always comply with the waste regulations of the municipality when disposing of waste.	Site manager	ok	Other			
Other	Before excavating it is necessary to investigate the contamination of the soil from earlier production or landfill sites.	Site manager	ok	Other			

Legislation, guidance and good advices

Legislation is LI adm. Order no. 376 of 21. June 2001 regarding client's obligations §6 subs. 2.

1. The adm. Order is describing the content of the site plan in headlines. The above-mentioned list explains more detailed the content of the headlines. The person who design and maintain the site plan should consider the items of the list. The site plan is an essential part of the PSH.
2. The person responsible for the site plan is elaborating a draft, which is distributed for comments from the involved parties on the building site. The checklist is used for control or inspiration by assessment of the site plan.
3. Necessary information is collected by those responsible from the involved players (consultant, main contractor, trade- and subcontractors or other performers) and these are incorporated in the final site plan.

Guidance and good advices

4. The site plan should include the total building site, however it can be an advantage to split it up in to several plans. e.g. inside buildings etc. The plan can be with a scale of 1:200 and hanged up in shed area and sheds.
5. Conditions, which can not be stated on the site plan, should be specified under 3.4.1 existing conditions, 3.4.2 work in common areas and security precautions, 3.4.3 common welfare precautions, 3.4.4 risk areas according to designers assessment and information or 3.4.5 contingency.
6. Possible changes to the site plan are discussed at the security meetings.
7. The checklist can also be used for control of specifications from the tender material and tender forms.
8. The site plan is immediately revised in case of major changes on the site.

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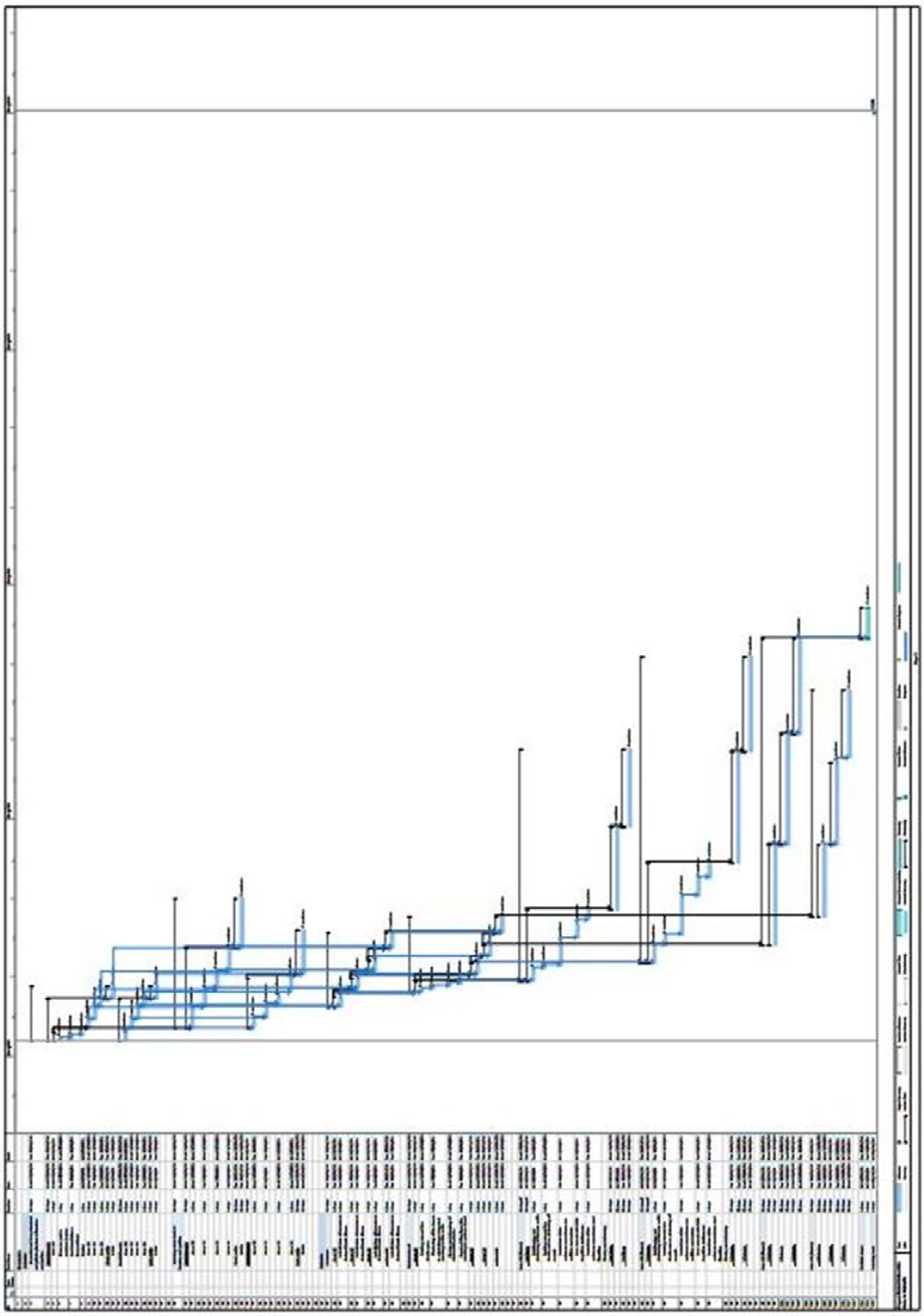
3.3. Time- and Manning plan of the site included Safety and Health



Legislation, guidance and good advices	Guidance and good advices
Legislation is LI adm. Order no. 376 of 21. June 2001 regarding client's obligations §6 subs. 1, 3 og 4. 1. The adm. Order is specifying the main components in the site's time- and manning plan included Safety and health. The time schedule shall specify where and in which period's dangerous activities are executed on the site. This plan is an essential part of PSH and the security coordination. 2. The person responsible for the site's time- and manning plan, included Safety and Health, elaborate a draft Which is distributed for comments from the involved parties on the site. The time schedule is assessed critically where several trades are working simultaneously at the same place. 3. Necessary information is collected by the responsible person from the involved parties (consultant, main contractor, trade- and subcontractors or other performers) and these are incorporated in the final time- and manning plan.	4. Conditions which can not be stated on the time- and manning plan should be specified under 3.4.2 work in common areas and security provisions or 3.4.4 risk areas according to designers assessment and information. 5. Particular dangerous activities are marked with a colour or other marking of the period. The marking are giving the executors on the site an opportunity to assess where and when Safety and Health problems can occur in their working area. The executors can plan own work according to this marking. 6. The person responsible for the time- and manning plan shall assess whether this particular dangerous activity require fencing of the involved working area. This is marked clearly on the time-and manning plan. 7. Possible changes to the time- and manning plan are discussed on the site's security meetings. The plan is up dated and hanged up e.g. in the sheds.

3.4.1 Description of existing conditions

The planned work	All planed work
Specifications from the tender material	Specified in the management for main contractor

Legislation, guidance and good advices	Guidance and good advices
1. The tender material shall contain a description of existing conditions on the site, which is significant for Safety and Health. 2. The person responsible for elaboration of description of existing conditions shall elaborate a short description of the planned work. Existing conditions specified in the tender material is included in the description.	3. A draft of the description of existing conditions is forwarded to the executor(s) for comments. 4. The executor(s) assess the draft and forward possible supplementary information or comments to the responsible. 5. A description of the existing conditions can be left out if these are clearly stated on the site plan.

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3.4.2 Description of common provisions, included work in common areas and common security provisions

Traffic areas on the site	Traffic is only for supplies and machines working in the field.
Responsible:	Site manager
Shed area	May stay by trained staff and visitors but only to site managers presence
Responsible:	Site manager
Storage areas	May stay by trained staff and visitors but only to site managers presence.
Responsible:	Site manager
Technical appliances	May only attend the related staff, the revaluation of all material taken to use
Responsible:	Site manager
Supply conditions	For receipt of goods takes place only by the site manager.
Responsible:	Site manager
Demarcation and coordination in common areas and description of chosen security provisions	At dangerous work there shall always be a trained supervisor.
Responsible:	Site manager/subcontractor foreman
Demarcation in common areas with dangerous activities	Where dangerous activities may be exercised to the worker's present on the spot
Responsible:	Site manager/ subcontractor foreman
Ongoing control of installations, security provisions and particular dangerous activities.	Conducted by the site manager or subcontractor foreman
Responsible:	Site manager/subcontractor foreman.
Contingency and exercises etc.	Consist of all the head in placed currently in the workplace.
Responsible:	Site manager
Other	
Responsible:	

Legislation, guidance and good advices	Guidance and good advices
1. The person responsible for PSH shall briefly describe relevant common provisions with responsibility and possibly period included: - The site's traffic areas, shed area and storage areas, working areas, technical appliances and supply conditions. - How all work in common areas are coordinated and demarcated with specification of chosen security provisions. - How demarcation is executed in all working areas with particular dangerous activities. - How simultaneous control is executed. - Coordination of contingency- and exercise plans.	2. A description of the relevant common provisions on the site can be left out if these are clearly specified on the site plan and time- and manning plan. 3. The description of common provisions is forwarded to the executor(s) for comments. 4. The executor(s) assess the draft and forward possible supplementing information or comments to the responsible person. 5. The description in the tender material can be used for better pricing of the bid, because it is clearly stated when and who shall establish, maintain and remove common provisions. 6. Location, load capacity and weather resistance of traffic- and access roads together with construction of scaffolding, class weight, width, access conditions and location are essential topics for the security on the site.

3.4.3 Common welfare provisions

Conditions in sheds	All personal has to wear safety equipment when going out on site.
Responsible:	Site manager
Conditions for changing clothes, toilet and bathing	All personal has to have a good hygiene and be healthy
Responsible:	Site manager
Location of personal appliances for protection	Shall be put up in the workers sheds. If it is on another place then there has to be a description of it's location.
Responsible:	Site manager.
Other	
Responsible:	
Other	
Responsible:	
Other	
Responsible:	

Legislation, guidance and good advices	Guidance and good advices
1. The responsible for PSH shall briefly describe the responsible for and possible period for welfare provisions On the site included: - Sheds for workers, foremen, site management and meetings. - Sheds for changing and bathing. - Konditions at toilet. - Location of personal appliances for protection.	2. A description of the welfare provisions on the site can be left out if they are clearly stated on the site plan. The contractor(s) assess the draft and forward possible supplementing information or comments to the responsible. 3. The description in the tender material is used to assess whether there is a need in the daily work for common provisions.

3.4.4 description of risk areas or particular dangerous activities according to designers assessment and information	
Fall from height	Maximum height/ depth is approx.. two meters. No fencing is used but precaution has to be taken by the workers at site.
Run into an accident with a vehicle	Vehicles must run with advocate velocity on site.
Get an electric shock	Make sure each power cable does not have water around it when executing work. Always use protective equipment. Cables in water can occur short circuit which can damage other machines that are running or even workers.
Hit by falling objects	Always use a helmet on site. Always be careful around yourself.
Get bad back lifting heavy objects	For heavy lifting be several workmen, or contract the supervisor who may get a machine for help. Do not be stubborn when it comes to lifting heavy. Your health may depend on it.
Be buried in connection with the excavation	Make sure to provide the excavator space when executing work so you do not fall in the pit or do not get any excavated soil on yourself.
Come into connection with hazardous substances	Try to avoid hazardous substances because the health of the workmen and for the environment. If you come in contact with it let you supervisor know. Several places at site has Washing substances because of this purpose to wash your skin/eyes with.

Legislation, guidance and good advices	Guidance and good advices
LI-adm. Order no. 576 regarding client's obligations § 3 and enclosure 1 together with LI-adm. Order no. 574 regarding designers obligations etc. § 10 and enclosure 1. 1. The responsible shall briefly list and describe, which particular dangerous activities or risk areas, is present on the site according to information in the tender material. 2. Activities mentioned in enclosure 1. Need special attention. 3. A list of particular dangerous activities can be left out if it is clearly stated on the site plan. And time- and manning plan. 4. The list of particular dangerous activities is forwarded to the contractor(s) for comments.	5. The contractor(s) assess the draft and forward possible comments, supplementing information or a security instruction to the responsible. 6. The final list is used by the responsible for PSH to assess the need for security instructions for the particular dangerous activities or risk areas. It is advisable that proposals for security instructions from the contractor(s) is included and coordinated in PSH 3.4.2. 7. Work more than 5 m above the terrain, work in deep excavations, work with dangerous substances and materials, sewage work, work with contaminated soil, demolition work, work with: asbestos, insulation, epoxy, work with high voltage transmissions, work close to water, work in wells and tunnels together with work with mounting and demounting heavy concrete- or wood based elements is all particular dangerous activities.

3.4.5 Contingency plan

Incident	What do you do?	Information
Work accident	Stop the accident and do not expose yourself for danger. Give life saving first aid Call 112 if necessary Contact the site's security coordinator. Wait for help.	Give precise information concerning address and location of the accident. Explain the condition of the injured person. First aid kit is available. Stretcher is available.
Fire	Try to extinguish the fire without danger to you or other. Help possible injured. Call 112 Contact the site's security coordinator. Wait for help.	Give precise information concerning address and location of the incident. Give precise information concerning extent of the fire and Possible injured. Fire fighting equipment is available.

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Environmental accident	Stop the accident, if possible, without danger for you or other. Help possible injured. Call 112 if necessary Contact the site's security coordinator. Wait for help.	Give precise information concerning address and location of the incident. Give as precise as possible information regarding extent of the Environmental accident and possible injured. Equipment for fighting environmental accidents is available.

3.5 Agenda for starting up- and security meetings

Date / 200	**Keeper of the minutes: site manager**	**Minutes:**	**Respons.**	**Deadline**
Item.	**Agenda: security coordinator**			
0.	**Participants and absent record to minutes and sending out)**			
1.	**Follow up from last meeting** Comments and approval of the minutes Assessment of and development in the building process Information from the security coordinator (client)			
2.	**Development in the work environment** Briefing regarding activities and initiatives since last meeting Briefing regarding coming activities Particular dangerous activities Coordination of work in common areas with an influence on Safety and Health Comments and updating to PSH, time- and manning plan and site plan Reported work accidents and result of the analyse of the accident Attempt to accident and assessment of this			
3.	**Preventive activities** Preventive initiatives according to analyse of the accidents Preventive initiatives according to attempt to accidents New initiatives to prevention of accidents and worn down Assessment of need for instruction and information			

4.	**Authorities etc.** New rules for working environment Orders or bans from Labour Inspectorate New from BST (Local Labour Inspectorate)			
5.	**Any Other Business**			
6.	**Next meeting and calling in new participants**			

Legislation, guidance and good advices	**Guidance and good advices**
1. The agenda can be used by the security coordinator to ensure that all items will be dealt with. Trade- or subcontractor as a memo before the security meeting can use the agenda.	2. The agenda can be used in start-up meetings and security meetings at smaller or larger sites with no demand for elaboration of a PSH. 3. This agenda can be changed or constructed according to the demands from the site or the work.

3.6 description of instruction for the workers on the site

Who is responsible for the instruction?	Site manager
How shall the instruction happen?	Either the site manager holds the instruction meetings. If not then the subcontractor foreman has to hold instruction meetings with his staff.
When shall the instruction happen?	Before starting at any activity so that the workmen can maximize their work, minimize safety and health risks.
What items and working activities shall be included in the instruction?	Moments that has connections with the executive work. Rules. Upcoming events.
Other	

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Legislation, guidance and good advices	Guidance and good advices
1. The employer is obliged to instruct the employees regarding conditions for Safety and Health on the site. 2. A good and effective instruction ensures that the employees act safe and healthy in their execution of the work. 3. A good instruction is also preventing work accidents. 4. The employees are obliged to execute the work according to given instructions and current rules for work environment. 5. Instructing is particular important for: - Young and apprentices - New colleagues - New or changed working tasks - New technology - Particular dangerous activities - Start up on a new building site - Strange subcontractors and suppliers	6. The instruction shall specify how, when and by whom the instruction of the site's employees will be carried out. 7. The security coordinator point out a person to carry out the instruction. 8. The instruction can be planned having execution of the work in important chapters together with particular dangerous activities focusing on key security and – health items. 9. A written safety instruction has to be elaborated for particular dangerous activities. Form 3.6A can be used for elaboration of written security instructions and the oral instruction.

3.6A Security instruction for falling objects

Who is senior responsible for the particular dangerous activity (ds)?	Site manager, subcontractor foreman. The manager for the specific activity.
Representatives of the security group	SR: AL: Trade manager or foreman
Who is responsible for instruction of the particular dangerous activity?	Site manager, subcontractor foreman
Who is responsible for control of particular dangerous activity?	Foreman, safety coordinator
Description of the particular dangerous activity (ds)	Objects falling from height
Description of risks	Workers can accidentally through objects to the ground, this objects can cause future accidents to other workers.
Description of needed security provisions	Do not take the security protections until the risk has been removed. Keep the working place in adequate conditions of security, in order and clean. Placement of perimetral rails and baseboards in scaffolding with a minimum height of 15 cm skirting board.
Description of need for planning and coordination	Site manager
Description of extent and time for information and instruction to the employed	Site manager
Description of usage of personal appliances for protection and welfare-provisions	Site manager
Specification of particular important control spots	Site manager

Building project:	KOLSTRUP HOUSING ASOCIATION	Project number.:		Completed Date:
Department:		Project manager:		Completed Bye:
Copies:				

Problem identification	Priority	Reason Analysis	Choice of solution	implemented no later Date:	Experience feedback
Risks derivated from the machinery	Medium	Materials can fall from the machinery.	Loading and unloading of materials will be made from platforms safely		
Risks of tools and small equipment	Medium	The tools and the equipment can derivate to a human accident	The materials will be transported with mechanincal means.		
Risks from exposure to chemicals	High	Workers work with joints and other chemical materials.	All workers will use chemical protection gloves.		
Risks derivated from load	Medium	Activities that may involve improper moves of the worker	The workers must know how to move in a correct position when they work with loads.		
Risks derivated from storage	Low	Displacements of the materials.	The storage of materials will be made on flat surfaces placing blocks to prevent displacements. Storage sites must have good foundations and be raised above the rest of the terrain.		
Risks derivated from the interference between activities	High	Difficulty doing the work	Do not place working equipment's in working routes and collect the tools and working equipment when the period of work is complete.		
Risks from work at height	High	People falling down	Use collective protection to control the risk of falling height and the working perimeter will be safety protected		
Risks derivated from weather conditions	High	Difficult weather conditions	People will not work when weather conditions are not suitable		
Risks derivated from cleaing the working areas	Low	Difficult the work to other workers	Organize and clean during the ejecution of the work.		
Risks from people working in different levels	High	Materials or tools falling down	Limit and sign the afected area to avoid people access to this risk area.		
Risk from people falling down at the same level	Medium	Trip over	Use safety shoes, keep the working place in adecuate conditions: clean and organised		

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Risk of collapse	High	Collapse of bricks or facade	Limit and sign the danger for collapse			
Risk of collision with objects	Medium	Absence from work order leaving the tools and materials misplaced	Use safety helmet, safety shoes and organize and clean the working area.			
Risk for tools cuts	High	Working tools that can ocasione cuts	Use safety gloves			
Risk for cuts from materials	High	Materials like tiles can cut the workers.	Use safety gloves			
Risk of run over	Medium	A movile machinery can run over the workers	All the roads will be delimitated for vehicles and there will be sidewalks for pedestrians. And if it is necesary the pedestrians will wear reflective vests.			
Risk of physical agents	Medium	Vibrations caused by hydraulic hammers				
Risk of cold stress	Medium	Working outdoors with intense cold	Work with the right clothes and do apropiate breaks when the temperatures are extrem.			
Risk of low light	High	Low light for work when night falls early	Installation of lighting to allow perfect visibility for workers.			

Activity Area	Green	Yellow	Red	Remarks
Bordering	X			
Sheds/Barracks	X			
Access Roads		X		
Lightning	X			
Electricity		X		
Ladders		X		
Storage Areas	X			
Materials	X			
Scaffolding		X		
Personal Safety Accesories	X			
Fencing	X			
Cleaning				
Dangerous liquids/materials		X		

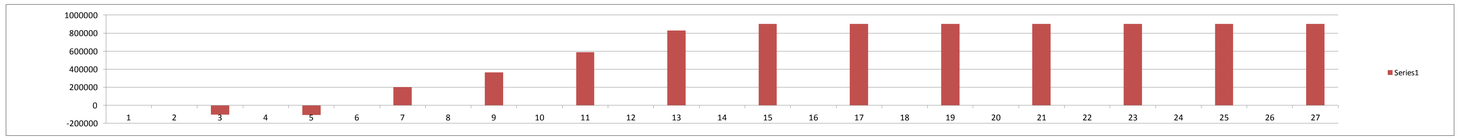
4.4.5. Production calculation

4.4.5.1. Intermediate calculation

Yolanda Calvo Mateo
June 2.015

intermediate calculations owenproduction

Activity	Trade: Masonry				September		Oktober		November		December		Januar		Februar		Marts		April		Maj		Juni		Juli		August		September		Oktober		Netto	Brutto	%
		Net	DB	Brutto	Net	Brutto	Net	Brutto	Net	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto	Netto	Brutto			
2.2-4.1.1	**Execution of the plint plaster**	84.819	1,22	103.479																													0	0	
																																			0%
	Wage+daywage+ socialcost	77.848		94.975	0	0	38924,18	94975	38924,18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77848,36	94975	
						0%		100%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	6.970		8.504	0	0	0	8504	6970,492	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6970,492	8504	
						0%		100%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
2.2-4.1.2	**Bricklaying outer leaf**	338.681	1,22	413.191																															
	Wage+daywage+ socialcost	249.684		304.614	0	0	58675,65	143168,6	124841,8	161445,4	66166,16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249683,6	304614	
						0%		47%		53%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	88.998		108.577	0	0	0	51031,19	41828,84	57545,81	47168,7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88997,54	108577	
						0%		47%		53%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
2.2-4.2.1-2	**Construction of airated concrete internal walls**	304.512	1,22	371.505																															
	Wage+daywage+ socialcost	182.707		222.903	0	0	1827,074	4458,06	33800,86	78016,05	62120,51	73557,99	43849,77	33435,45	27406,11	33435,45	13703,05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182707,4	222903	
						0%		2%		35%		33%		15%		15%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	121.805		148.602	0	0	0	2972,04	2436,098	52010,7	42631,72	49038,66	40195,62	22290,3	18270,74	22290,3	18270,74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121804,9	148602	
						0%		2%		35%		33%		15%		15%		0%		0%		0%		0%		0%		0%		0%		0%		100%
2.2-4.2.3	**Casting around steelbeams**	114.661	1,22	139.886																													0	0	
																																			0%
	Wage+daywage+ socialcost	68.797		83.932	0	0	2063,902	5035,92	17199,18	36930,08	21670,97	15947,08	13071,38	15947,08	11007,48	10911,16	4471,787	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69484,69	84771,32	
						0%		6%		44%		19%		19%		13%		0%		0%		0%		0%		0%		0%		0%		0%		101%
	Machines+ materials	45.864		55.954	0	0	0	3357,24	2751,836	24619,76	20180,13	10631,26	8714,148	10631,26	8714,148	7274,02	5962,311	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46322,57	56513,54	
						0%		6%		44%		19%		19%		13%		0%		0%		0%		0%		0%		0%		0%		0%		101%
2.2-4.2.4	**Plastering of the bores**	39.269	1,22	47.908																															
	Wage+daywage+ socialcost	23.561		28.745	0	0	706,8443	1724,7	5890,369	12647,8	7421,865	5461,55	4476,68	5461,55	3769,836	3736,85	1531,496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23797,09	29032,45	
						0%		6%		44%		19%		19%		13%		0%		0%		0%		0%		0%		0%		0%		0%		101%
	Machines+ materials	15.707		19.163	0	0	0	1149,78	942,4426	8431,72	6911,246	3640,97	2984,402	3640,97	2984,402	2491,19	2041,959	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15864,45	19354,63	
						0%		6%		44%		19%		19%		13%		0%		0%		0%		0%		0%		0%		0%		0%		101%
2.2-4.2.5	**Closing and cleaning of chutes**	13.773	1,22	16.803																															
																																			0%
	Wage+daywage+ socialcost	8.264		10.082	0	0	1032,992	2520,5	4131,967	7561,5	3098,975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8263,934	10082	
						0%		25%		75%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	5.509		6.721	0	0	0	1680,25	1377,254	5040,75	4131,762	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5509,016	6721	
						0%		25%		75%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
2.2-4.2.6	**Execution of wetroom membrane on walltiles and**	1.106.207	1,22	1.349.573																															
																																			0%
	Wage+daywage+ socialcost	663.725		809.744	0	0	0	0	76328,33	186241,1	149338	178143,7	169249,8	234825,8	182524,3	210533,4	86284,2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	663724,6	809744	
						0%		0%		23%		22%		29%		26%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	442.483		539.829	0	0	0	0	0	124160,7	101771	118762,4	97346,21	156550,4	128320	140355,5	115045,5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	442482,8	539829	
						0%		0%		23%		22%		29%		26%		0%		0%		0%		0%		0%		0%		0%		0%		100%
2.2-4.3.1	**New screed with slope in bathrooms**	560.635	1,22	683.975																															
	Wage+daywage+ socialcost	336.381		410.385	0	0		0	13455,25	32830,8	68958,14	135427,1	111005,8	135427,1	85777,19	73869,3	42047,64	28726,95	11773,34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	333017,3	406281,2	
						0%		0%		8%		33%		33%		18%		7%		0%		0%		0%		0%		0%		0%		0%		99%
	Machines+ materials	224.254		273.590	0	0	0	0	0	21887,2	17940,33	90284,7	74003,85	90284,7	74003,85	49246,2	40365,74	19151,3	15697,79	0	0	0	0	0	0	0	0	0	0	0	0	0	222011,6	270854,1	
						0%		0%		8%		33%		33%		18%		7%		0%		0%		0%		0%		0%		0%		0%		99%
2.2-4.3.2	**Execution of wetroom membrane and floortiles**	368.509	1,22	413.218																															
	Wage+daywage+ socialcost	203.222		247.931	0	0		0	13455,25	32830,8	68958,14	135427,1	104278,2	119011,7	74003,85	61557,75	50457,17	61557,75	25228,59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	336381,1	410385	
						0%		0%		8%		33%		29%		15%		15%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	165.287		165.287	0	0	0	0	0	21887,2	17940,33	90284,7	74003,85	79341,1	65033,69	41038,5	33638,11	41038,5	33638,11	0	0	0	0	0	0	0	0	0	0	0	0	0	224254,1	273590	
						0%		0%		8%		33%		29%		15%		15%		0%		0%		0%		0%		0%		0%		0%		100%
2.2-4.3.3	**Installation of terrazo in stairwell**	96.307	1,22	117.495																															
	Wage+daywage+ socialcost	57.784		70.497	0	0		205192,5	168190,6	205192,5	84095,29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252285,9	410385	
						0%		50%		50%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	38.523		46.998	0	0	0	136795	112127	136795	112127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224254,1	273590	
						0%		50%		50%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
2.2-4.3.4	**Repair of floor tile covering in parterre level**	15.410	1,22	18.800																															
	Wage+daywage+ socialcost	9.246		11.280	0	0	1155,738	2820	4622,951	8460	3467,213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9245,902	11280	
						0%		25%		75%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	6.164		7.520	0	0	0	1880	1540,984	5640	4622,951	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6163,934	7520	
						0%		25%		75%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		100%
	Outside areas	112.558	1,22	137.321																															
	Wage+daywage+ socialcost	67.535		82392,534	0	0	0	0	0	0	0	0	0	0	0	0	4622,951	11280	4622,951	0	0	0	0	0	0	0	0	0	0	0	0	0	9245,902	11280	
						0%		0%		0%		0%		0%		0%		100%		0%		0%		0%		0%		0%		0%		0%		100%
	Machines+ materials	45.023		54.928	0	0	0	0	0	0	0	0	0	0	0	0	0	7520	6163,934	0	0	0	0	0	0	0	0	0	0	0	0	0	6163,934	7520	
						0%		0%		0%		0%		0%		0%		100%		0%		0%		0%		0%		0%		0%		0%		100%
		0		0	0																														
		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
						0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%		0%	0%
	Sum	3.155.342	657.812	3.813.154	0	0	104386,4	667264,8	670815,7	1220175	910720,5	906607,1	743179,6	906847,3	681815,6	656739,7	418442,7	169274,5	97124,71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3626485	4526908	
	Executed net				0		104386,4		670815,7		910720,5		743179,6		681815,6		418442,7		97124,71		0		0		0		0		0		0		0				
	Executed net acc.				0		104386,4		775202,1		1685923		2429102		3110918		3529360		3626485		3626485		3626485		3626485		3626485		3626485		3626485				
	Executed gross					0		667264,8		1220175		906607,1		906847,3		656739,7		169274,5		0		0		0		0		0		0		0				
	Executed gross acc.					0		667264,8		1887440		2794047		3700894		4357634		4526908		4526908		4526908		4526908		4526908		4526908		4526908		4526908				
	Interim certificate							0		667264,8		1220175		906607,1		906847,3		656739,7		169274,5		0		0		0		0		0		0				
	Interim certificate acc.							0		667264,8		1887440		2794047		3700894		4357634		4526908		4526908		4526908		4526908		4526908		4526908		4526908				
	Liquidity					0		-104386		-107937		201517		364944,5		589976,2		828273,2		900423		900423		900423		900423		900423		900423		900423				



4.5. CONSTRUCTION

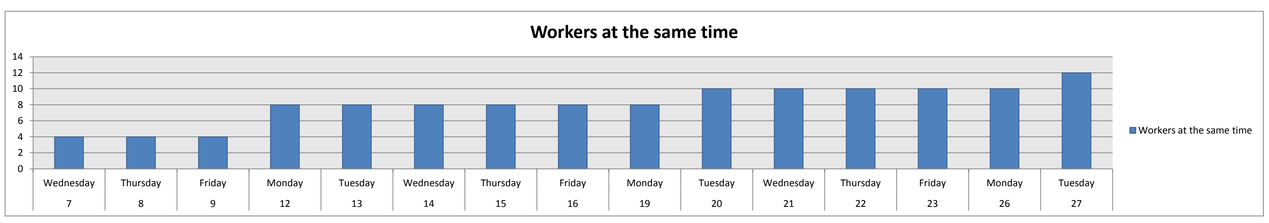
4.5.1. 3 weeks plan

4.5.1.1. Delivery plan

		Place an order	Day	Delivery date
	EXTERNAL PART			
2.2-4.1	Execution plinth and plaster (thermoblock, bitumen paint, moisture barrier, hard insulation and mortar)	28/09/2015	Monday	05/10/2015
		06/10/2015	Tuesday	13/10/2015
2.2-4.2	Bricking outer leaf of facades and gables Soft insulation, wind barrier, walltiles, anchor and mortar	02/10/2015	Friday	09/10/2015
		16/10/2015	Friday	23/10/2015

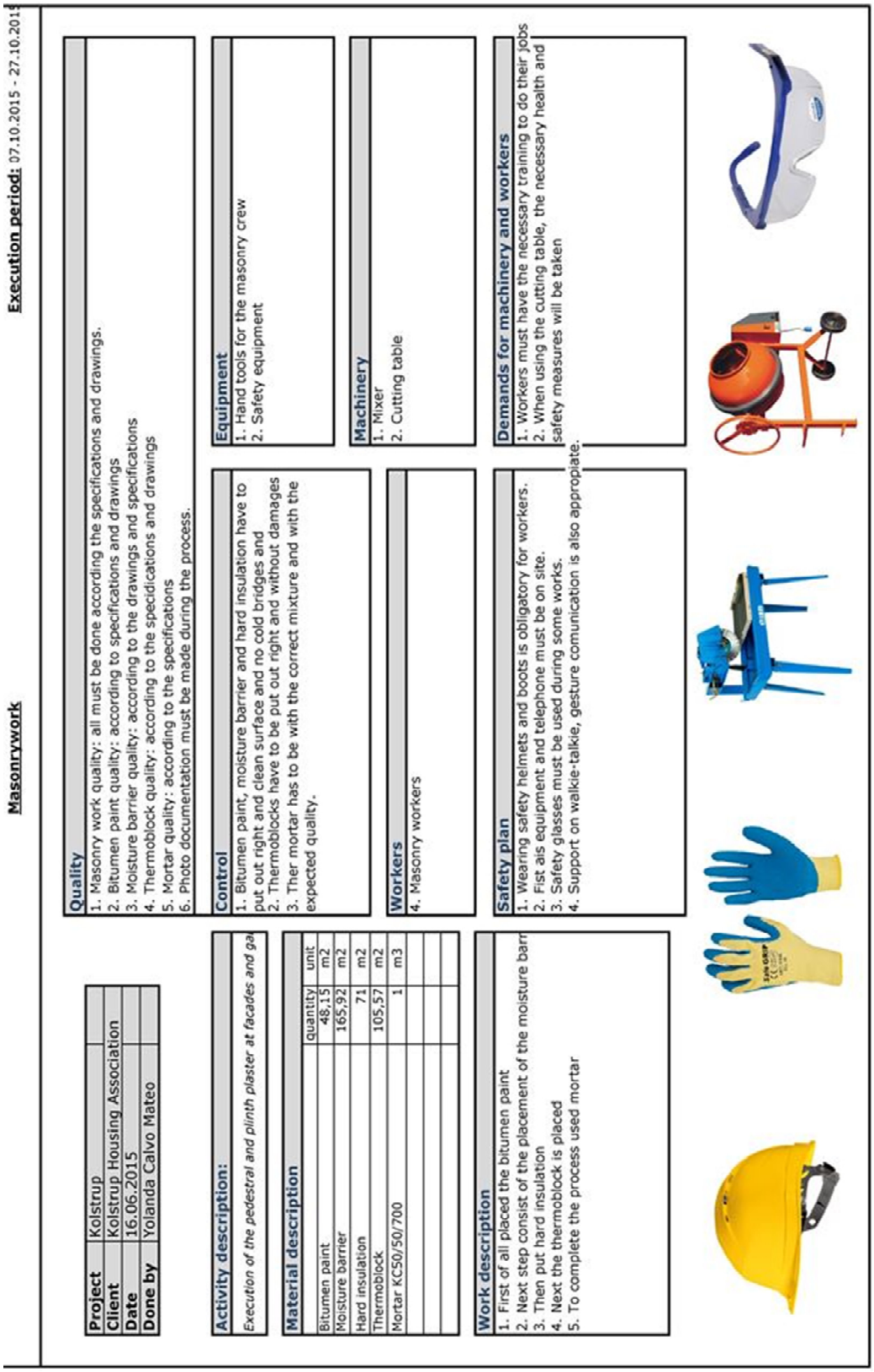
(The place an order dates is one week before Delivery Dates)

3 weeks plan for: Kolstrup Housing Association	Duration days of task (in total)	OCTOBER 2.015 Week 1					OCTOBER 2.015 Week 2					OCTOBER 2.015 Week 3					OCTOBER 2.015 Week 4				
By: Yolanda Calvo Mateo				7	8	9	12	13	14	15	16	19	20	21	22	23	26	27			
18/06/2015		Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday
MASONRY																					
Execution of the pedestral and plinth plaster at facades and gables																					
North - South facade																					
Area 10	3			Max. 2 workers																	
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Bitumen paint	1			2																	
Moisture barrier	1			2																	
Hard insulation	1				2																
Thermoblock 100mm	1				2																
Control check	1																				
Mortar	1					2															
Area 12	3						Max. 2 workers														
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Bitumen paint	1						2														
Moisture barrier	1						2														
Hard insulation	1							2													
Thermoblock 100mm	1							2													
Control check	1																				
Mortar									2												
Area 14	3									Max. 2 workers											
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Bitumen paint	1									2											
Moisture barrier	1									2											
Hard insulation	1										2										
Thermoblock 100mm	1										2										
Control check	1																				
Mortar	1											2									
Area 16	3												Max. 2 workers								
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Bitumen paint	1												2								
Moisture barrier	1												2								
Hard insulation	1													2							
Thermoblock 100mm	1													2							
Control check	1																				
Mortar	1														2						
West - East gable	3															Max. 2 workers					
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Bitumen paint	1															2					
Moisture barrier	1															2					
Hard insulation	1																2				
Thermoblock 100mm	1																2				
Control check	1																				
Mortar	1																	2			
Bricking outer leaf of facades and gables																					
North facade																					
Area 10	6						Max. 2 workers														
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Soft insulation	1						2														
Wind barrier	1							2													
Control check	4																				
Starting of walltiles	4								2	2	2	2									
Anchors	4								2	2	2	2									
Finishing of walltiles	4								2	2	2	2									
Area 12	5												Max. 2 workers								
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Soft insulation	1												2								
Wind barrier	1													2							
Control check	3																				
Starting of walltiles	3														2	2	2				
Anchors	3														2	2	2				
Finishing of walltiles	3														2	2	2				
Area 14	5																	Max. 2 workers			
PSH analysis of the job including all workers on the job																					
*Delivery of the materials + receiving control**	1																				
Soft insulation	1																	2			
Wind barrier																					
Control check																					
Starting of walltiles																					
Anchors																					
Finishing of walltiles																					
South facade																					
Area 10	4						Max. 2 workers														
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Soft insulation	1						2														
Wind barrier	1							2													
Control check	1																				
Starting of walltiles	2								2	2											
Anchors	2								2	2											
Finishing of walltiles									2	2											
Area 12	3										Max. 2 workers										
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Soft insulation	1										2										
Wind barrier	1											2									
Control check	1																				
Starting of walltiles	1												2								
Anchors	1												2								
Finishing of walltiles	2												2								
Area 14	3													Max. 2 workers							
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Soft insulation	1													2							
Wind barrier	1														2						
Control check	1																				
Starting of walltiles	1															2					
Anchors	1															2					
Finishing of walltiles	1															2					
Area 16	5																Max. 2 workers				
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Soft insulation	1																2	2			
Wind barrier																	2	2			
Control check																					
Starting of walltiles																					
Anchors																					
Finishing of walltiles																					
Staircase																					
Area 10	4												Max. 2 workers								
PSH analysis of the job including all workers on the job	4																				
*Delivery of the materials + receiving control**																					
Installation of terrazo in stairwell	4												2	2	2	2					
Area 12	4																	Max. 2 workers			
PSH analysis of the job including all workers on the job	4																				
*Delivery of the materials + receiving control**																					
Installation of terrazo in stairwell	4																	2			
Execution of parterre level																					
Area 10	4																	Max. 2 workers			
PSH analysis of the job including all workers on the job	1																				
*Delivery of the materials + receiving control**																					
Casting around the steelbeams	1																	2			
Plastering of the bores in which there is located openings in the walls	1																		2		
...																					
** Delivery materials and receiving control were few days before if there are problems in delivery or about the material.*	Workers at the same time	4	4	4	8	8	8	8	8	8	10	10	10	10	10	12					



4.5.2. Works drawing for the site labours

4.5.2.1. Production card



Masonrywork **Execution period:** 07.10.2015 - 27.10.2015

Project	Kolstrup
Client	Kolstrup Housing Association
Date	16.06.2015
Done by	Yolanda Calvo Mateo

Activity description:

Execution of the pedestral and plinth plaster at facades and ga

Material description	quantity	unit
Bitumen paint	48,15	m2
Moisture barrier	165,92	m2
Hard insulation	71	m2
Thermoblock	105,57	m2
Mortar KC50/50/700	1	m3

Work description
1. First of all placed the bitumen paint
2. Next step consist of the placement of the moisture barr
3. Then put hard insulation
4. Next the thermoblock is placed
5. To complete the process used mortar

Quality
1. Masonry work quality: all must be done according the specifications and drawings.
2. Bitumen paint quality: according to specifications and drawings
3. Moisture barrier quality: according to the drawings and specifications
4. Thermoblock quality: according to the specidications and drawings
5. Mortar quality: according to the specifications
6. Photo documentation must be made during the process.

Control
1. Bitumen paint, moisture barrier and hard insulation have to put out right and clean surface and no cold bridges and
2. Thermoblocks have to be put out right and without damages
3. Ther mortar has to be with the correct mixture and with the expected quality.

Workers
4. Masonry workers

Equipment
1. Hand tools for the masonry crew
2. Safety equipment

Machinery
1. Mixer
2. Cutting table

Safety plan
1. Wearing safety helmets and boots is obligatory for workers.
2. Fist ais equipment and telephone must be on site.
3. Safety glasses must be used during some works.
4. Support on walkie-talkie, gesture comunication is also appropiate.

Demands for machinery and workers
1. Workers must have the necessary training to do their jobs
2. When using the cutting table, the necessary health and safety measures will be taken

4.5.2.2. Work description

STEP 1

First of all the ***bitumen paint*** is placed.

STEP 2

After the ***moisture barrier*** placed over the barrier bitumen and continuing up.

STEP 3:

The next step consists in placing the ***hard insulation*** covering part of the moisture barrier and leaving space for placing the following material

STEP 4:

The following are placed ***thermoblock 100mm*** almost occuping the space for the plint

STEP 5:

To end ***mortar*** is placed as a final finish

4.5.3. Management

4.5.3.1. Process control

Contract: 2.2-4.1 Execution plinth & Paster Sag nr.: 2.2-4.1

PROCESS CONTROL: Building part: Bricking outer leaf of facades and gables House nr. 13 part nr.:	CONTROL CIRKUMFERENCE
NR. CONTROLD BY:	CONTROL-METHODE:
1. Bitumen paint	Visual
2. Moisture barrier	Visual-measure
3. Hard insulation	Visual-photo
4. Thermoblock	Visual-measure
5. Mortar	Visual-measure
6.	Visual
7.	
8.	
9.	

	Control activity										
date	1	2	3	4	5	6	7	8	9	be marks	sign
09/10/15 14/10/15 19/10/15 22/10/15 27/10/15	X									1.Bitumen paint, moisture barrier, hard insulation and thermoblock 2. Mortar	Foreman
09/10/15 14/10/15 19/10/15 22/10/15 27/10/15		X								1.Bitumen paint, moisture barrier, hard insulation and thermoblock 2. Mortar	Foreman
09/10/15 14/10/15 19/10/15 22/10/15 27/10/15			X							1.Bitumen paint, moisture barrier, hard insulation and thermoblock 2. Mortar	Foreman
09/10/15 14/10/15 19/10/15 22/10/15 27/10/15				X						1.Bitumen paint, moisture barrier, hard insulation and thermoblock 2. Mortar	Foreman
09/10/15 14/10/15 19/10/15 22/10/15 27/10/15					X					1.Bitumen paint, moisture barrier, hard insulation and thermoblock 2. Mortar	Foreman

Contract: 2.2-4.2 Bricking outer leaf of facades and gables Sag nr.: 2.2-4.2

PROCESS CONTROL: Building part: Bricking outer leaf of facades and gables House nr. 13 part nr.: 2.2-4.2		CONTROL CIRKUMFERENC
NR.	CONTROLD BY:	CONTROL-METHODE:
1.	Soft insulation	Visual-photo
2.	Wind barrier	Visual-measure
3.	Wall tiles	Visual-measure
4.	Anchor	Visual
5.		
6.		
7.		
8.		
9.		

date	Control activity 1	2	3	4	5	6	7	8	9	be marks	sign
09/10/15 13/10/15 19/10/15 22/10/15	X										
09/10/15 13/10/15 19/10/15 22/10/15		X									
15/10/15 19/10/15 20/10/15 23/10/15 24/10/15		X									
15/10/15 19/10/15 20/10/15 23/10/15 24/10/15			X								

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

4.5.3.2. Receive control

Contract: 2.2-4.1 Execution plinth & Paster Case nr.: 2.2-4.1

RECEIVE CONTROL:

Control that:

- Bitument paint
- Moisture barrier
- Hard Insulation
- Thermoblock
- Mortar

Date:	Bill of ladding:	Supplier:	Remarks:	Sign:
5/10/15	1.1.1	Jevith	Thermoblock	Foreman
5/10/15	1.1.2	byghjemme	Bitumen paint, moisture barrier, hard insulation and mortar	Foreman
13/10/15	1.2.1	Jevith	Thermoblock	Foreman
13/10/15	1.2.2	byghjemme	Bitumen paint, moisture barrier, hard insulation and mortar	Foreman

Contract: 2.2-4.2 Bricking outer leaf of facades and gables Case nr.: 2.2-4.2

RECEIVE CONTROL:

Control that:

- Soft insulation
- Wind barrier
- Walltiles
- Anchor
- Mortar

Date:	Bill of ladding:	Supplier:	Remarks:	Sign:
09/10/15	2.1.1	Jevith	Walltiles,anchor	
09/10/15	2.1.2	byghjemme	Soft insulation, wind barrier and mortar	
23/10/15	2.2.1	Jevith	Walltiles,anchor	
23/10/15	2.2.2	byghjemme	Soft insulation, wind barrier and mortar	

4.5.4. Economy

4.5.4.1. Enclosure

Enclosure A to interim certificate

Case Kolstrup Housing Association

for Masonry

Enclosure A

Interim certificate nr:1

Final bill pr.:

Contract nr.

Contract nr. Maincontract

October

Distributionlist	Executed kr.		Amount in kr.
Execution of plint plaster	103479	100%	103479
Bricklaying outer leaf	413191	47%	194199,8
Construction of aerated concrete internal walls	371505	2%	7430,1
Casting around steelbeams	139886	6%	8393,16
Plasterion of the bores	47908	6%	2874,48
Closing and cleaning of chutes	16803	25%	4200,75
Execution of wetroom membrane on walltiles and mirror	1349573	0%	0
New screed with slipe in bathrooms	683975	0%	0
Execution of wetroom membrane and floortiles	413218	0%	0
Installation of terrazo in stairwell	117495	50%	58747,5
Repair of floor covering in parterre level	18800	25%	4700
Outside areas	137321	0%	0
	0	0%	
	0	0%	
Contractamount ex VAT	3.813.154		384024,8
Contractamount ex. VAT			

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Enclosure A to interim certificate

Case Kolstrup Housing Association

for Masonry

Enclosure A
Interim certificate nr:2
Final bill pr.:
Contract nr.
Contract nr. Maincontract

November

Distributionlist	Executed kr.		Amount in kr.
Execution of plint plaster	103479	100%	103479
Bricklaying outer leaf	413191	100%	413191
Construction of aerated concrete internal walls	371505	37%	137456,9
Casting around steelbeams	139886	50%	69943
Plasterion of the bores	47908	50%	23954
Closing and cleaning of chutes	16803	100%	16803
Execution of wetroom membrane on walltiles and mirror	1349573	23%	310401,8
New screed with slipe in bathrooms	683975	8%	54718
Execution of wetroom membrane and floortiles	413218	8%	33057,44
Installation of terrazo in stairwell	117495	100%	117495
Repair of floor covering in parterre level	18800	100%	18800
Outside areas	137321	0%	0
	0	0%	0
	0	0%	0
	0	0%	0
	0	0%	0
Contractamount ex VAT	3.813.154		1299299

Contractamount ex. VAT

Enclosure A to interim certificate

Case Kolstrup Housing Association

for Masonry

Enclosure A
Interim certificate nr:3
Final bill pr.:
Contract nr.
Contract nr. Maincontract

December

Distributionlist	Executed kr.		Amount in kr.	
Execution of plint plaster	103479	100%	103479	
Bricklaying outer leaf	413191	100%	413191	
Construction of aerated concrete internal walls	371505	70%	260053,5	
Casting around steelbeams	139886	69%	96521,34	
Plasterion of the bores	47908	69%	33056,52	
Closing and cleaning of chutes	16803	100%	16803	
Execution of wetroom membrane on walltiles and mirror	1349573	45%	607307,9	
New screed with slipe in bathrooms	683975	41%	280429,8	
Execution of wetroom membrane and floortiles	413218	41%	169419,4	
Installation of terrazo in stairwell	117495	100%	117495	
Repair of floor covering in parterre level	18800	100%	18800	
Outside areas	137321	0%	0	
	0	0%	0	
	0	0%	0	
	0	0%	0	
	0	0%	0	
Contractamount ex VAT	3.813.154		2116556	

Contractamount ex. VAT

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Enclosure A to interim certificate

Case Kolstrup Housing Association

for Masonry

Enclosure A
Interim certificate nr:04
Final bill pr.:
Contract nr.
Contract nr. Maincontract

January

Distributionlist	Executed kr.		Amount in kr.	
Execution of plint plaster	103479	100%	103479	
Bricklaying outer leaf	413191	100%	413191	
Construction of aerated concrete internal walls	371505	85%	0	
Casting around steelbeams	139886	88%	0	
Plasterion of the bores	47908	88%	0	
Closing and cleaning of chutes	16803	100%	0	
Execution of wetroom membrane on walltiles and mirror	1349573	74%	998684	
New screed with slipe in bathrooms	683975	74%	506141,5	
Execution of wetroom membrane and floortiles	413218	70%	289252,6	
Installation of terrazo in stairwell	117495	0%	0	
Repair of floor covering in parterre level	18800	0%	0	
Outside areas	137321	0%	0	
	0	0%	0	
	0	0%	0	
	0	0%	0	
	0	0%	0	
Contractamount ex VAT	3.813.154		2310748	
Contractamount ex. VAT				

Enclosure A to interim certificate

Case Kolstrup Housing Association

for Masonry

Enclosure A
Interim certificate nr:5
Final bill pr.:
Contract nr.
Contract nr. Maincontract

February

Distributionlist	Executed kr.		Amount in kr.	
Execution of plint plaster	103479	100%	103479	
Bricklaying outer leaf	413191	100%	413191	
Construction of aerated concrete internal walls	371505	100%	371505	
Casting around steelbeams	139886	100%	139886	
Plasterion of the bores	47908	100%	47908	
Closing and cleaning of chutes	16803	100%	16803	
Execution of wetroom membrane on walltiles and mirror	1349573	100%	1349573	
New screed with slipe in bathrooms	683975	92%	629257	
Execution of wetroom membrane and floortiles	413218	85%	351235,3	
Installation of terrazo in stairwell	117495	100%	117495	
Repair of floor covering in parterre level	18800	100%	18800	
Outside areas	137321	0%	0	
	0	0%	0	
	0	0%	0	
	0	0%	0	
	0	0%	0	
Contractamount ex VAT	3.813.154		3559132	

Contractamount ex. VAT

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Enclosure A to interim certificate

Case Kolstrup Housing Association

for Masonry

Enclosure A
Interim certificate nr:6
Final bill pr.:
Contract nr.
Contract nr. Maincontract

March

Distributionlist	Executed kr.		Amount in kr.	
Execution of plint plaster	103479	100%	103479	
Bricklaying outer leaf	413191	100%	413191	
Construction of aerated concrete internal walls	371505	100%	371505	
Casting around steelbeams	139886	100%	139886	
Plasterion of the bores	47908	100%	47908	
Closing and cleaning of chutes	16803	100%	16803	
Execution of wetroom membrane on walltiles and mirror	1349573	100%	1349573	
New screed with slipe in bathrooms	683975	100%	683975	
Execution of wetroom membrane and floortiles	413218	100%	413218	
Installation of terrazo in stairwell	117495	100%	117495	
Repair of floor covering in parterre level	18800	100%	18800	
Outside areas	137321	100%	137321	
	0	0%	0	
	0	0%	0	
	0	0%	0	
	0	0%	0	
Contractamount ex VAT	3.813.154		3813154	
Contractamount ex. VAT				

4.5.4.2. Interim certificate

Case	Kolstrup Housing Association		
for	Masonry		
October		Interim certificate nr: 1	
		Final bill.: Date 22/03/2016	
		Contract nr.:	
		Contract nr.:	
Pkt.		Executed work	Remarks
1	Contract amount 3.813.154	384.025	
2	Extrawork ex. VAT	0	
3	Omission work ex VAT	0	
4	Cuntract amount	384.025	
5	Earlier paid	0	
6	Total	384.025	
7	VAT	96.006	
8	To be paid	480.031	
	Date 28/10/2015 /		Date /
	Contractor		Manager
Remarks			
Recieved	Recommanded to be paid at:	Date	Sign

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Case Kolstrup Housing Association

for Masonry

November

Interim certificate nr: 2

Final bill.: Date 22/03/2016

Contract nr.:

Contract nr.:

Pkt.		Executed work	Remarks
1	Contract amount 3.813.154	1.299.299	
2	Extrawork ex. VAT	0	
3	Omission work ex VAT	0	
4	Cuntract amount	1.299.299	
5	Earlier paid	384.025	
6	Total	915.274	
7	VAT	228.819	
8	To be paid	1.144.093	

Date 27/11/2015

Contractor

Date /

Manager

Remarks

Recieved	Recommanded to be paid at:	Date	Sign

Case Kolstrup Housing Association

for Masonry

December

Interim certificate nr: 3

Final bill.: Date 22/03/2016

Contract nr.:

Contract nr.:

Pkt.		Executed work	Remarks
1	Contract amount 3.813.154	2.116.556	
2	Extrawork ex. VAT	0	
3	Omission work ex VAT	0	
4	Cuntract amount	2.116.556	
5	Earlier paid	1.299.299	
6	Total	817.257	
7	VAT	204.314	
8	To be paid	1.021.572	

Date 28/12/2015

Contractor

Date /

Manager

Remarks

Recieved	Recommanded to be paid at:	Date	Sign

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Case Kolstrup Housing Association

for Masonry

January

Interim certificate nr: 4

Final bill.: Date 22/03/2016

Contract nr.:

Contract nr.:

Pkt.		Executed work	Remarks
1	Contract amount 3.813.154	2.310.748	
2	Extrawork ex. VAT	0	
3	Omission work ex VAT	0	
4	Cuntract amount	2.310.748	
5	Earlier paid	2.116.556	
6	Total	194.192	
7	VAT	48.548	
8	To be paid	242.740	

Date 28/01/2016

Contractor

Date

Manager

Remarks

Recieved	Recommanded to be paid at:	Date	Sign

Case	Kolstrup Housing Association		
for	Masonry		
	February	Interim certificate nr: 5	
		Final bill.: Date 22/03/2016	
		Contract nr.:	
		Contract nr.:	
Pkt.		Executed work	Remarks
1	Contract amount 3.813.154	3.559.132	
2	Extrawork ex. VAT	0	
3	Omission work ex VAT	0	
4	Cuntract amount	3.559.132	
5	Earlier paid	2.310.748	
6	Total	1.248.384	
7	VAT	312.096	
8	To be paid	1.560.480	
	Date 29/02/2016		Date /
	Contractor		Manager
Recieved			
Recieved	Recommanded to be paid at:	Date	Sign

Autor: **Yolanda** Calvo Mateo
Nº TFG: 422.13.194

Case Kolstrup Housing Association

for Masonry

March

Interim certificate nr: 6

Final bill.: Date 22/03/2016

Contract nr.:

Contract nr.:

Pkt.		Executed work	Remarks
1	Contract amount 3.813.154	3.813.154	
2	Extrawork ex. VAT	0	
3	Omission work ex VAT	0	
4	Cuntract amount	3.813.154	
5	Earlier paid	3.559.132	
6	Total	254.022	
7	VAT	63.505	
8	To be paid	317.527	

Date 28/03/2016

Contractor

Date /

Manager

Remarks

Recieved	Recommanded to be paid at:	Date	Sign

4.6. HANDING OVER

4.6.1. Protocol

The contract below is hereby accepted as handed over dated			*01.10.2016*
Trade	*Masonry works*		
PRESENT	Client	*Kolstrup Housing Association*	
	Trade	*Subcontractor*	
	Management	*Yolanda Calvo Mateo*	
EXTEND	Extent of the trade is described in following documents: Contract agreement dated : Updated building component list dated :		
HANDING OVER	The work is handed over with a delay in the followings day		*22.03.2016*
DEFECTS	The trade is handed over with the defects described in the defect list dated : Furthermore following defect has been found: *No defects were visible at handing over*		
EXECUTION	Above mentioned defects must be corrected before: Corrected defects are documented in the defect list with the contractor's signature.		
ECONOMY	Before the defects has been corrected the following amount will be detained : Furthermore the following work has been postponed as agreed: In the final interim certificate the following amount will be detained excl. VAT		
TIME	1- Year inspection must be carried out no later than: The liability period according to AB 92 expires		*22.11.2017* *22.11.2021*
SIGNATURE	*Yolanda Calvo Mateo* Contractor		*01.10.2016* Date
	Kolstrup Housing Association Client		*01.10.2016* Date

5. BIBLIOGRA

- AB 92 – Danish regulation (DANSK BYGGERI)
- Handbook VIA University College for 5th semester.
- Notes provided by teachers of 5th semester

Relación de documentos

(X) Memoria .....216 páginas

(_) Anexos ..... 93 páginas

La Almunia, a 08 de 09 de 2015

Firmado: Yolanda Calvo MateoYolanda Calvo Mateo

ESCUELA UNIVERSITARIA POLITÉCNICA
DE LA ALMUNIA DE DOÑA GODINA (ZARAGOZA)

Rehabilitación y remodelación de viviendas

(Refurbishment and conversion of multistorey building)

Nº TFG: 422.13.194

Autor: Yolanda Calvo Mateo

Director: José Ángel Pérez Benedicto

Fecha: 08-09-2.01508-09-2.015

ESCUELA UNIVERSITARIA POLITÉCNICA
DE LA ALMUNIA DE DOÑA GODINA (ZARAGOZA)

ANEXOS

Rehabilitación y remodelación de viviendas

(Refurbishment and conversion of multistorey building)

Nº TFG: 422.13.194

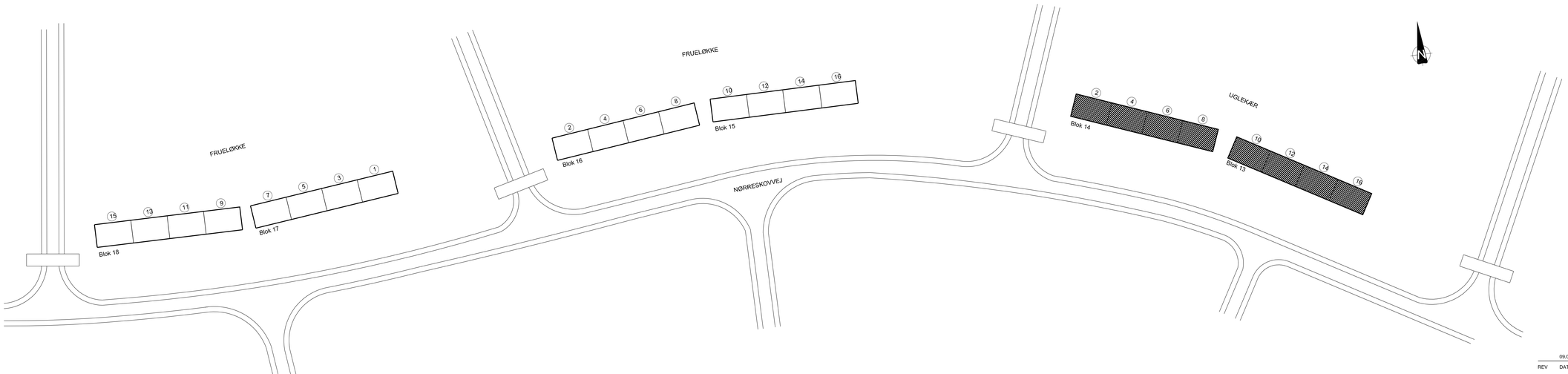
Autor: Yolanda Calvo Mateo

Director: José Ángel Pérez Benedicto

Fecha: 08-09-2.015

Autor: Yolanda Calvo Mateo
Nº TFG: 422.13.194

LIST OF CONTENTS



NR **A-001**

Signatur forklaring

Projektet omhandler blok 13 og 14

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL		1:1000

KOLSTRUP
BOLIGFORENING AFD 16

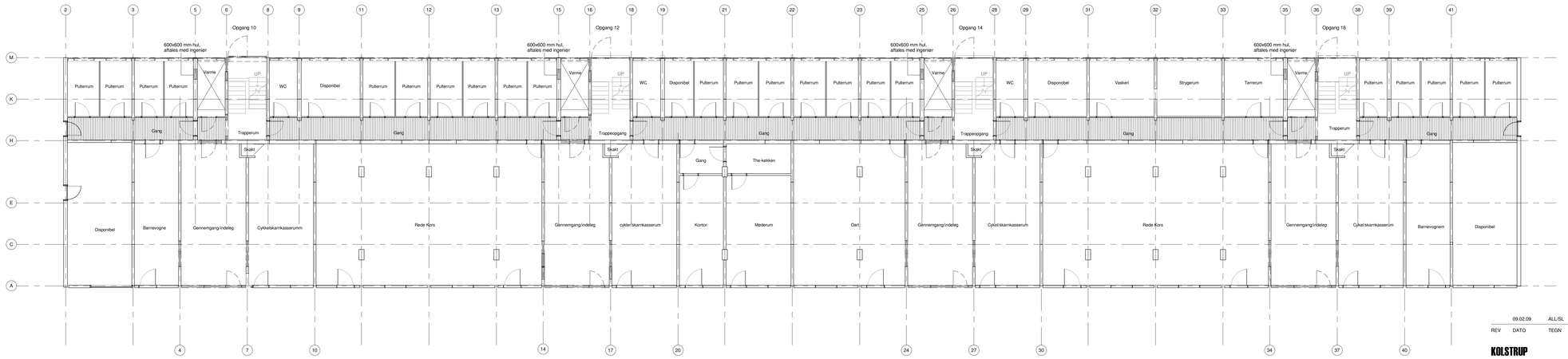
NOVA5

BYGGEPLADS	UGLEKÆR
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende Ingeniør as Karolinegade 3 6000 Kolding T +45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København K T +45 3311 1335

Situationsplan

NR **A-001**

NR. **A-103**



Signatur

- 150 mm betonvægge incl. dære
- Letbetonvægge
- 220 mm beton vægge incl. dære
- Vinduesparti modul A
- Kældervinduer/brystning og facadedør incl. sideparti modul M
- Ichte
- Skakt — Låge fjernes
- Huller i huldæk

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	ALL/SL	ALL/SL		1 : 100

KOLSTRUP

BOLIGFORENING AFD. 16

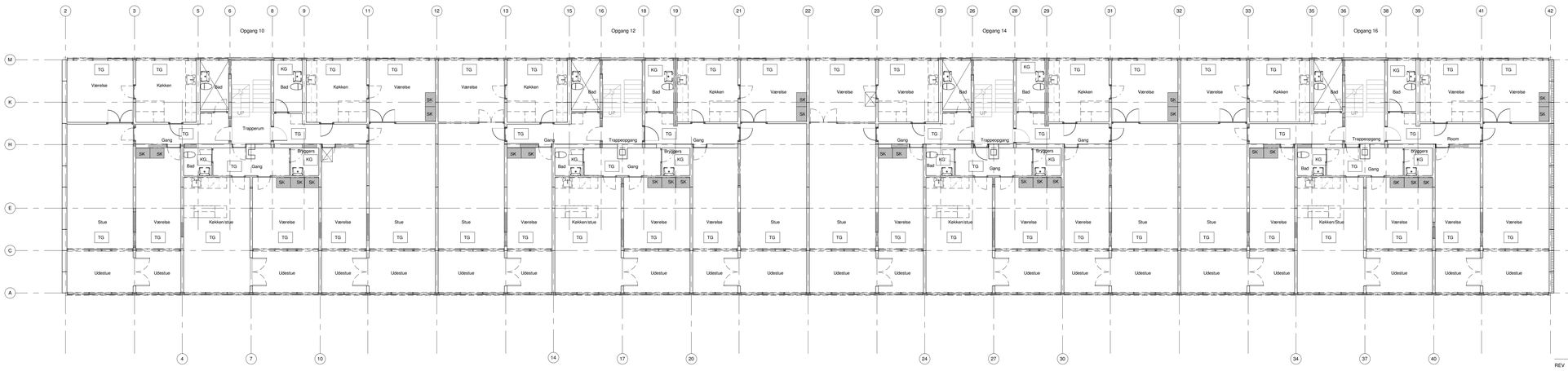
N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVAS arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Kanslinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Parterreetagen blok 13 - nedrivning/ eksisterende forhold

NR **A-103**

NR. **A-104**



Signatur

- Samtlige køkkener elementer fjernes
- Samtlige sanitet fjernes
- SK — Skabe demonteres og sættes i depot
- 150 mm betonvægge incl. døre
- 220 mm betonvægge incl. døre
- Letbetonvægge incl. døre
- Vinduespartier incl. lister mm. Se facade A-201 og A-202
- Vinduespartier og brystning incl. lister mm. Se facade A-201 og A-202
- Forplade i gavl iht. ingeniørprojekt
- Enkelt/dobbelt dør fjernes incl gerigt
- Huller i huldæk
- TG — Parketgulv fjernes incl streer
- KG — klinkegulv fjernes incl. afretnings/betonlag ned til huldæk

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	ALL/SL	ALL/SL		1 : 100

KOLSTRUP

BOLIGFORENING AFD. 16

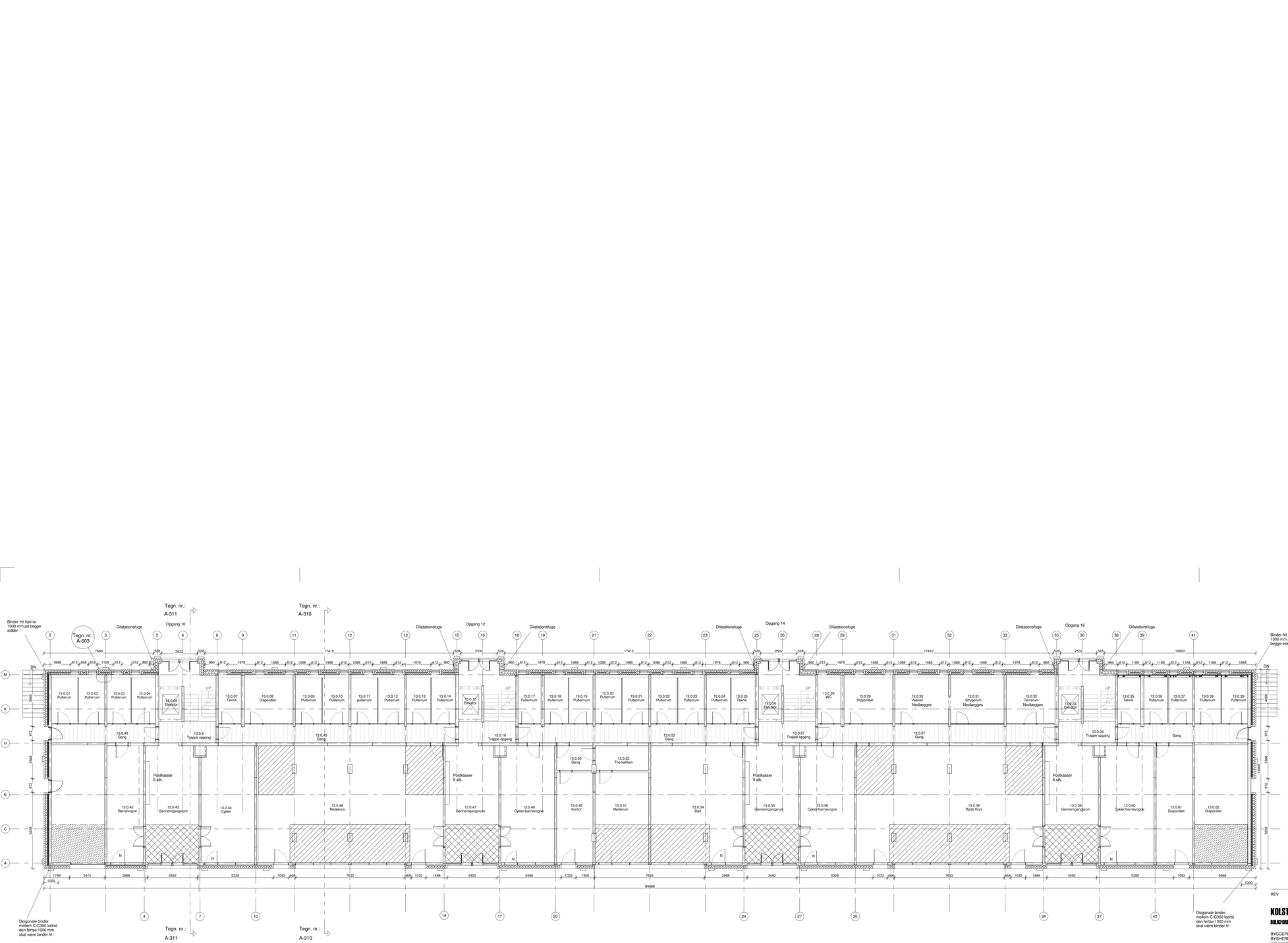
N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVAS arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0680
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

1- 3 salsplan blok 13 - nedrivning /eksisterende forhold

NR **A-104**

NR. **A-112**



Signatur

- Skalmuring (nordfacaden) Se tegn nr. A602
- Skalmuring mod eksisterende betonvægge. (øst og vestgavl) Teglsten, 7 mm hulrum, 225 mm isolering
- Skalmuring mod eksisterende facadeparter. (sydfacaden) Se tegn nr. A613
- 350 mm hulmur (indgangsparti) Teglsten, 7 hulrum, 125 isolering, teglsten, puds
- 410 mm hulmur (indgangsparti) Teglsten, 7 mm hulrum, 175 mm isolering, teglsten, puds
- Affaldskakke - tilmuring af hul efter låge med efterfølgende pudsning
- Der nedlægges, greb mm fjernes og blændstykke monteres.
- Nye lofter Træbeton på forskalling
- Eksisterende nedhængte lofter demonteres 75 mm isolering fastgøres til dæk Nedhængte lofter genmonteres
- Lofter 75 mm isolering fastgøres til dæk Opsætning af 12,5 mm gips på lægter
- Eksisterende lofter demonteres 75 mm isolering fastgøres til dæk Opsætning af nye træbeton lofter på lægter

Note

Alle mål er i mm
Målsætning i eksisterende bygning er vejledende.
Det påhviler entreprenøren at tage kontrolmål på stedet.

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	ALL/SL	ALL		1 : 100

KOLSTRUP

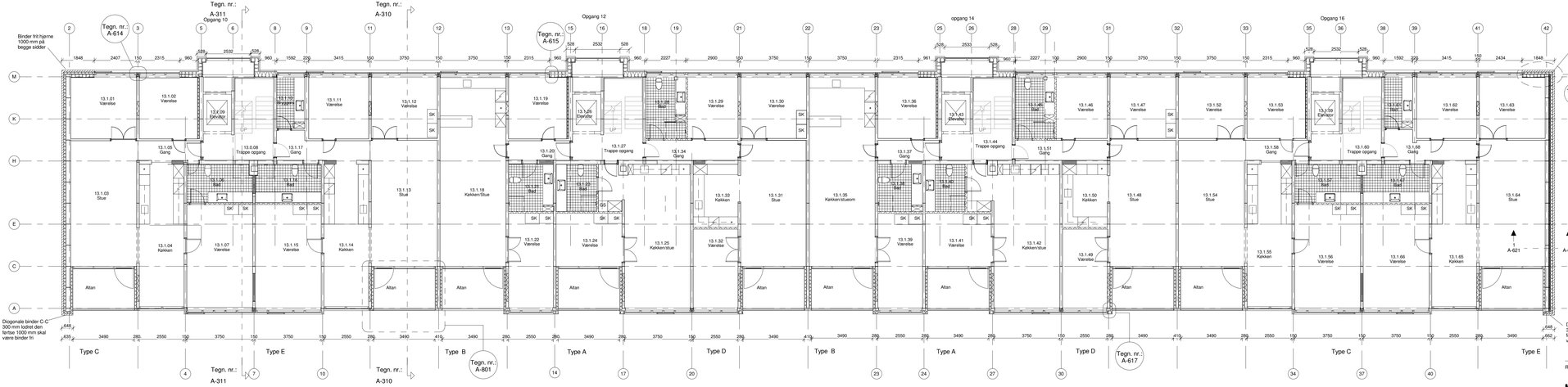
BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVAS arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Kanslinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Parterreetagen blok 13 - fremtidige forhold

NR. **A-112**

NR. **A-113**



Signatur

- Skalmuring mod betonelement,(nord-/ sydfacader og vestgavl se tegn nr. A-608
- Skalmuring/oppveng Se tegn nr. A-610
- Zinkfacade mod betonelement (nord og sydfacaden) Se tegn nr. A-608
- Skalmuring mod eksisterende betonvægge. (øst gavl) Se tegn nr. A-620
- Beton udstøbning i 220 eksisterende betonelement
- Beton udstøbning i 150 eksisterende betonelement
- 150 mm porebeton
- 100 mm porebeton
- SK SK — Eksisterende skabe hentes i depot og genopsættes
- GS — Skabe som HTH hvidlakeret, højskabe 500 garderobeskab og 800 dobbeltskab

Note

Alle mål er i mm
Målsætning i eksisterende bygning er vejledende.
Det påhviler entreprenøren at tage kontrolmål på stedet.

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	ALL/SL	ALL		1 : 100

KOLSTRUP

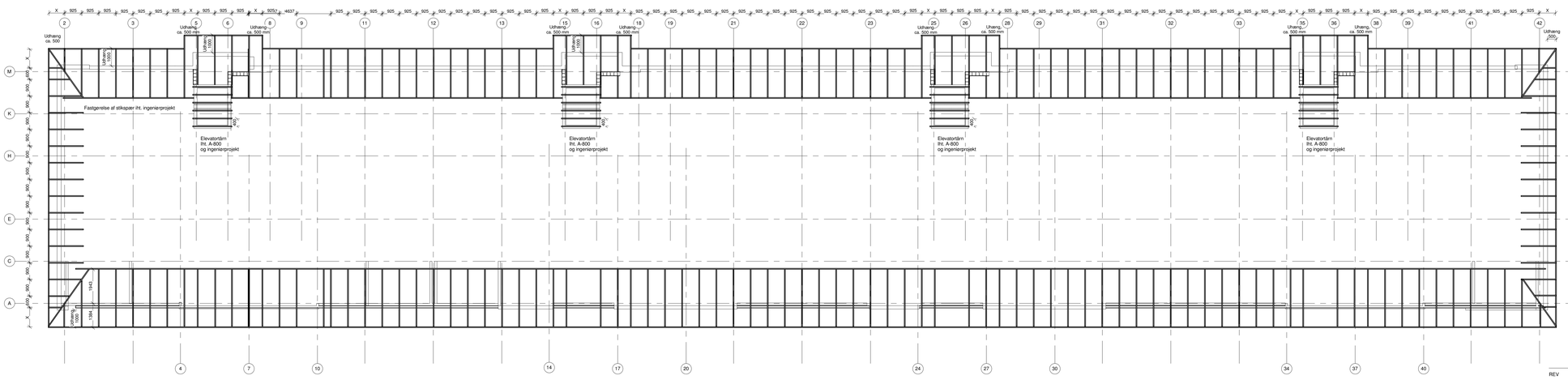
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Kancelregade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

1-3 salsplaner blok 13 - fremtidige forhold

NR **A-113**



NR. **A-114**

Signatur

Gipsvæg med stålregler ved elevator
2x13 gips begge sider og 200 mm isolering

Note

Alle mål er i mm
Målsætning i eksisterende bygning er vejledende.
Det påhviler entreprenøren at tage kontrolmål på stedet.

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1 : 100

KOLSTRUP

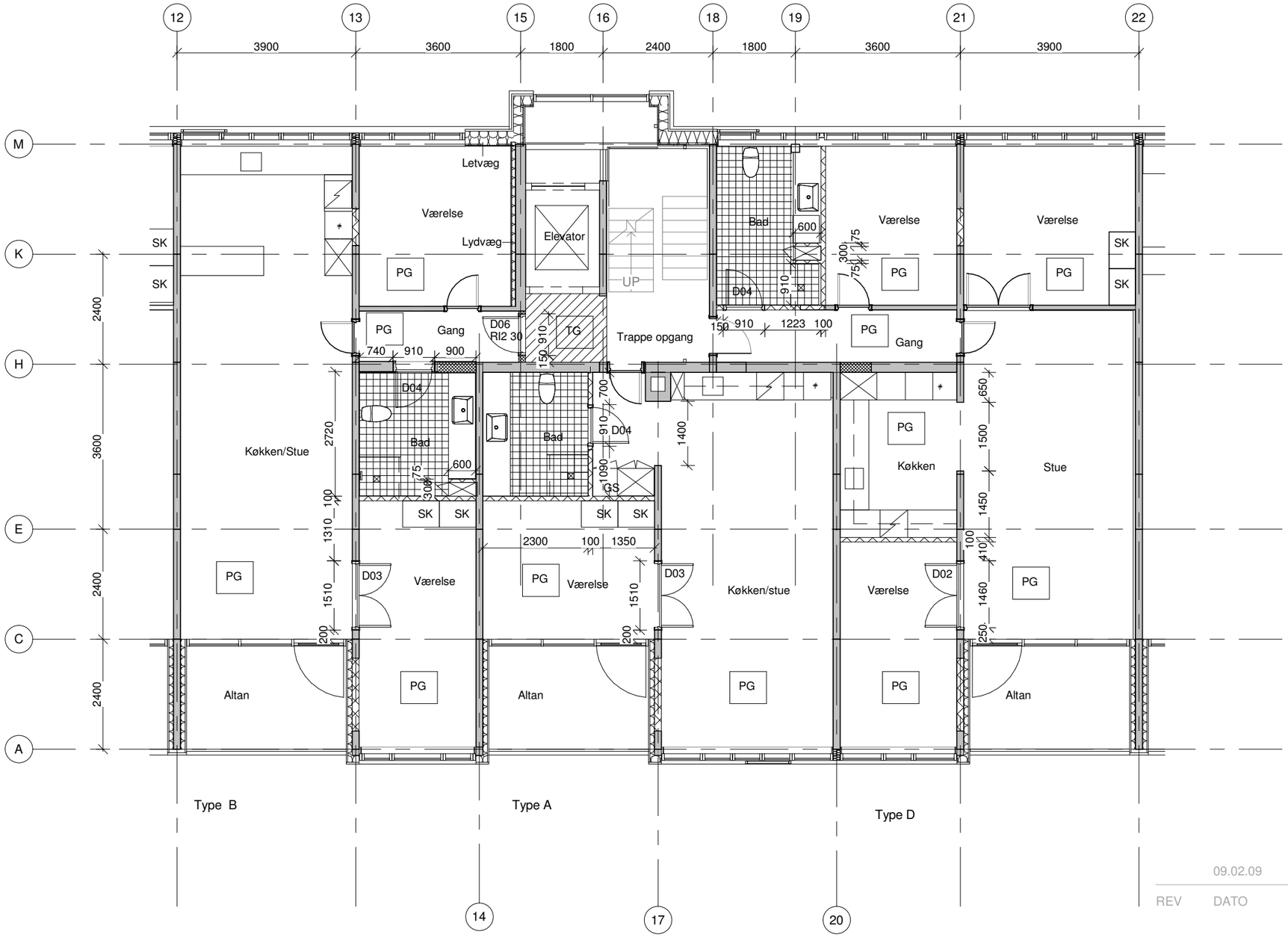
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVAS arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0680
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Princip
Tagplan blok 13-14 - fremtidige forhold

NR **A-114**



Signatur

- Vægge
  Beton udstøbning af dørhuller
- 150 mm porebeton med puds på begge sider
- 100 mm porebeton med puds på begge sider
- 75 mm Porebeton
- Lydvæg- 2x13 gips/70 stålskelet/isolering/10 mm luft
- Letvæg - 2x13 gips/stålskelet/dampspærre/isolering. se tegn nr. A610
- PG — Gulve
  22 mm mat lakeret aske parketgulv på strøer, incl 50 mm isolering
- TG — Terrazzogulv
- SK — Inventar
  Eksisterende skabe hentes i depot og genopsættes
- GS — Skabe som HTH hvidlakeret, højskabe
  500 garderobeskab og 800 dobbeltskab

Note

Alle mål er i mm
Målsætning i eksisterende bygning er vejlende.
Det påhvilker entreprenøren at tage kontrolmål på stedet.

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	ALL	SL/AD		1 : 100

KOLSTRUP

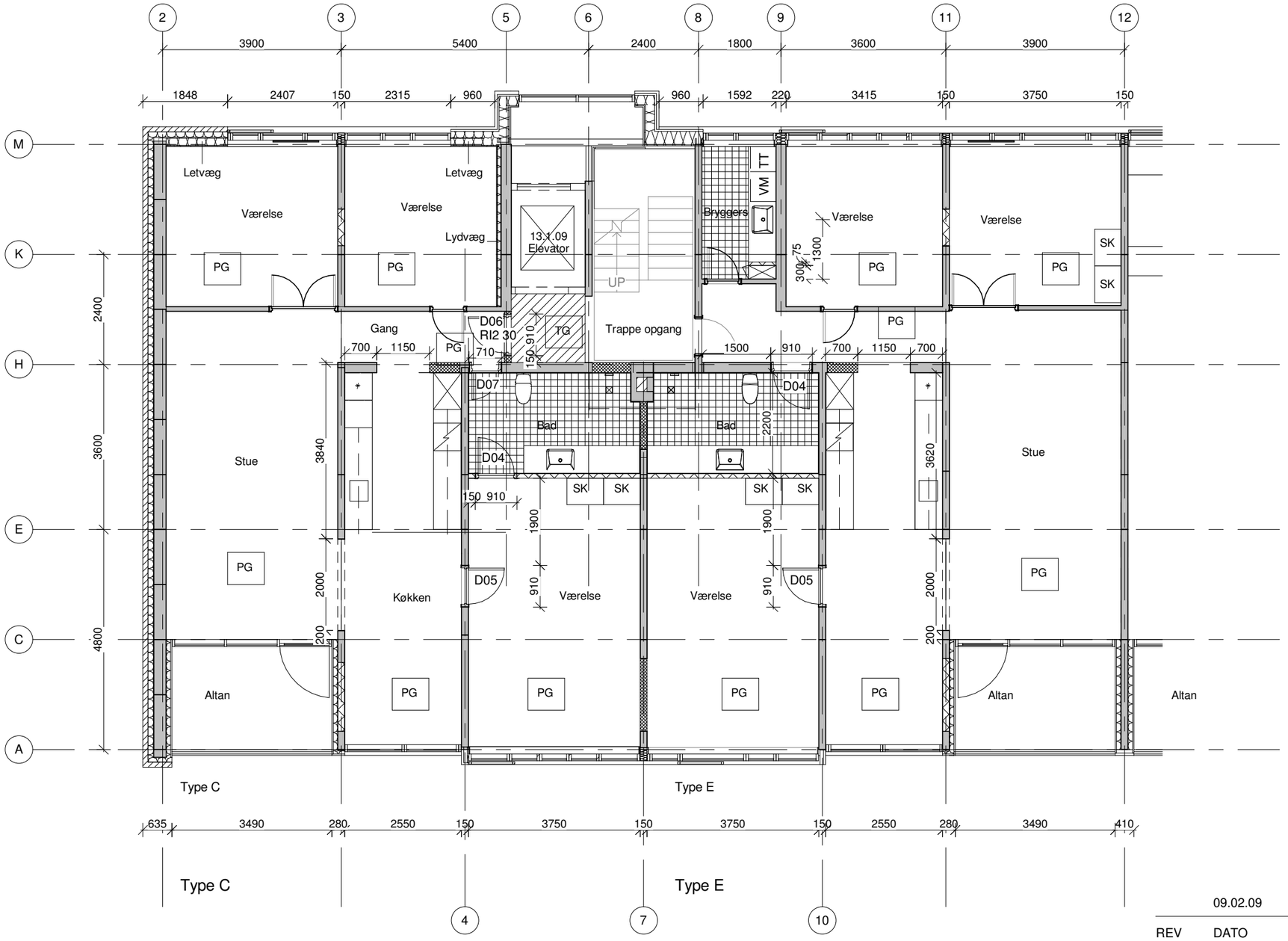
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Boligplan type A - B - D. blok 13 og 14 - fremtidige forhold

NR A-120



Signatur

Vægge
Beton udstøbning af dørhuller

150 mm porebeton med puds på begge sider

100 mm porebeton med puds på begge sider

75 mm Porebeton

Lydvæg- 2x13 gips/70 stålskelet/isolering/10 mm luft

Letvæg - 2x13 gips/stålskelet/dampspærre/isolering. se tegn nr. A610

PG — Gulve
22 mm mat lakeret aske parketgulv på strøer, incl 50 mm isolering

TG — Terrazzogulv

SK — Inventar
Eksisterende skabe hentes i depot og genopsættes

GS — Skabe som HTH hvidlakeret, højskabe
500 garderobeskab og 800 dobbeltskab

Note

Alle mål er i mm
Målsætning i eksisterende bygning er vejlende.
Det påhvilker entreprenøren at tage kontrolmål på stedet.

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	ALL	SL		1 : 100

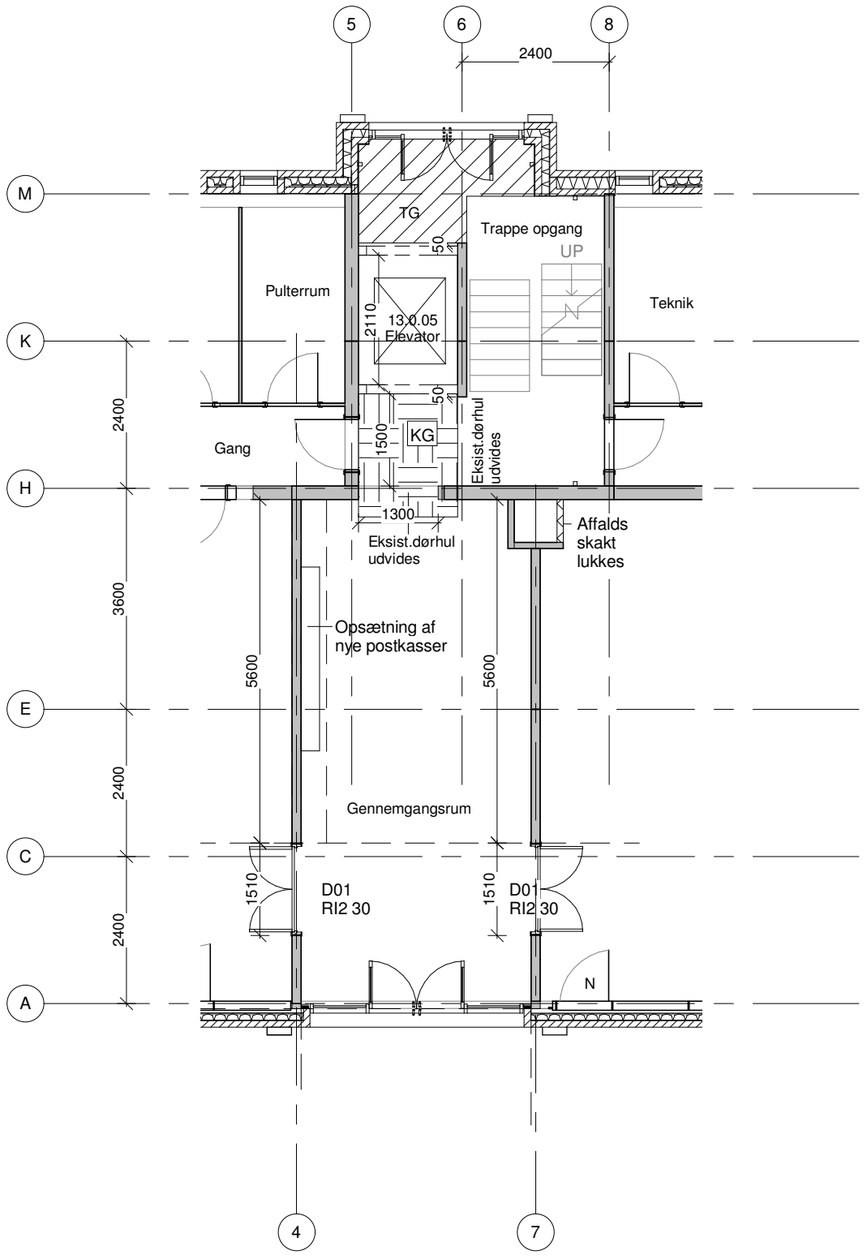
KOLSTRUP

BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Boligplan type C - E. blok 13 - fremtidige forhold

NR A-121



Signatur

- Affaldsskakt - Tilmuring af hul efter låge
- Beton udstøbning af dørhuller
- N — Dør nedlægges, greb mm fjernes og blændstykke monteres
- TG — Terrezzogulv
- KG — Eksisterende Kinke gulv repereres

Elevator vægge mm. iht. leverandøren anvisninger

Note

Alle mål er i mm
Målsætning i eksisterende bygning er vejlende.
Det påhvilker entreprenøren at tage kontrolmål på stedet.

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 100
	09.02.09	ALL	SL/AD		

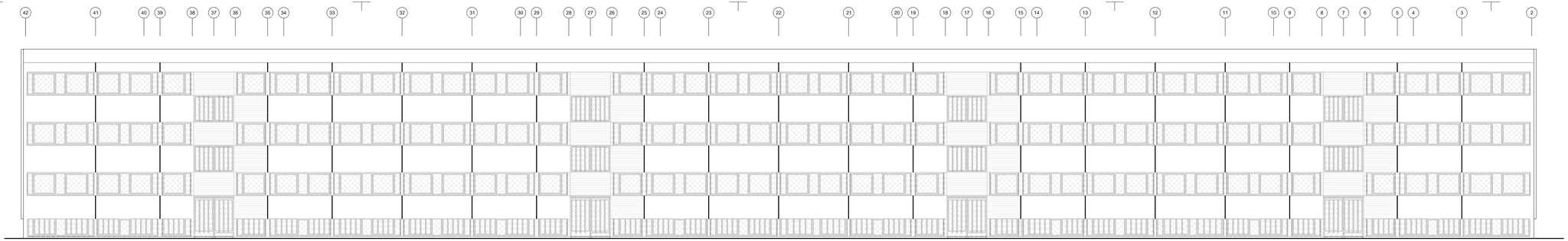
KOLSTRUP

BOLIGFORENING AFD. 16

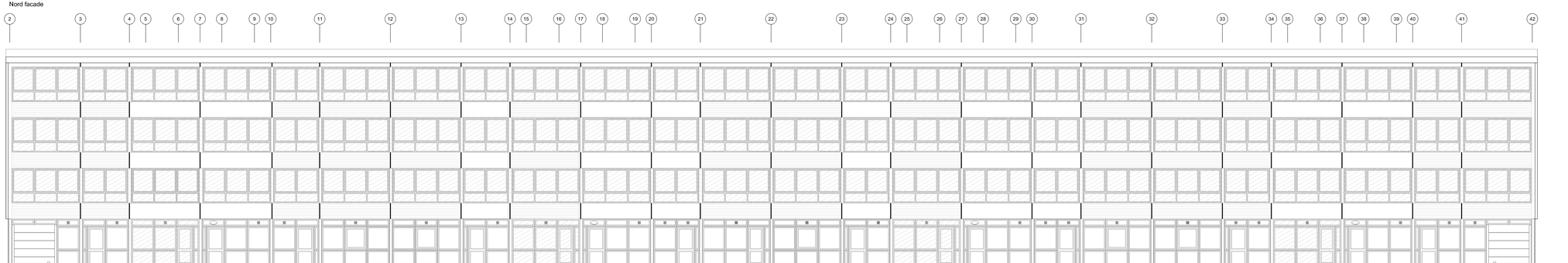
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Trappeopgange parterreetagen blok 13 og 14 - fremtidige forhold

NR A-122



Nord facade



Syd facade

NR **A-202**

Signatur

- Trævindue og dør - nedrives og bortskaffes
- Betonelement - nedrives og bortskaffes
- Plast/træ- vindue og dør - nedrives og bortskaffes

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1:100

KOLSTRUP
BOLIGFORENING AFD 16

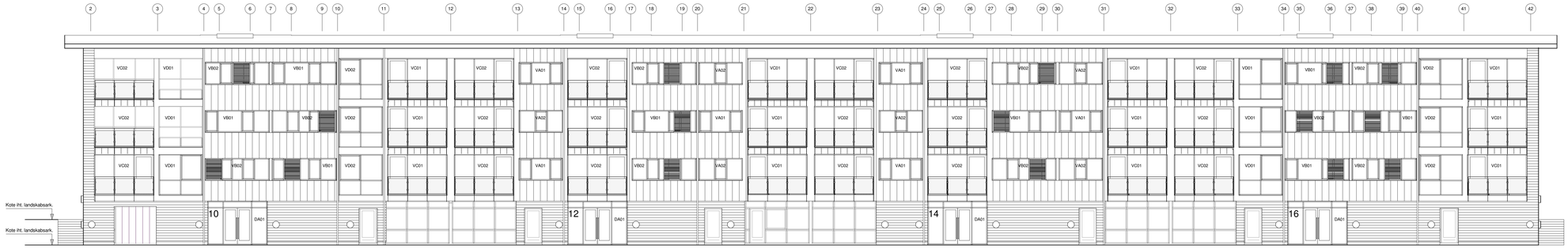
NOVA5

BYGGEPLADS UGLEKÆR
BYGHERRE Kolstrup Boligforening afd. 16

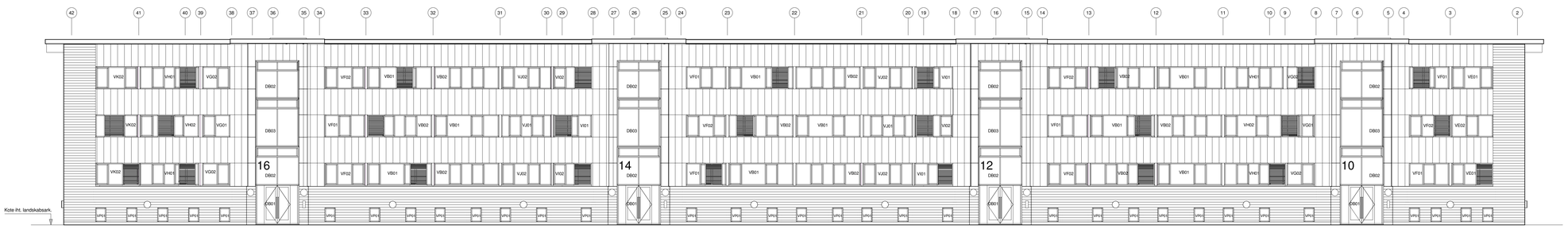
● ARKITEKT NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR Hundsbæk & Henriksen Rådgivende Ingeniør as Karolinegade 3 6000 Kolding T +45 7943 5300
○ LANDSKAB Thing & Waina landskabsarkitekter aps St. Kongensgade 40H 1264 København K T +45 3311 1335

Nord og syd blok 13 - Nedrivning eksisterende forhold

NR **A-202**



Syd facade



Nord facade

Signatur

- Skalmuring mod betonelement,(nord- / sydfacade) og vestgavl se tegn nr. A608
- Zinkfacade mod betonelement (nord og sydfacaden) Se tegn nr. A608
- Lampe
- Indmuret dørtelefon

NR. **A-212**

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1 : 100

KOLSTRUP

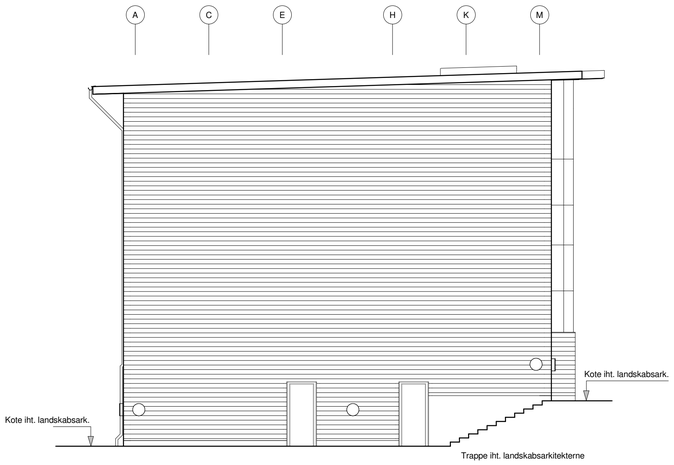
BOLIGFORENING AFD. 16

N5VA

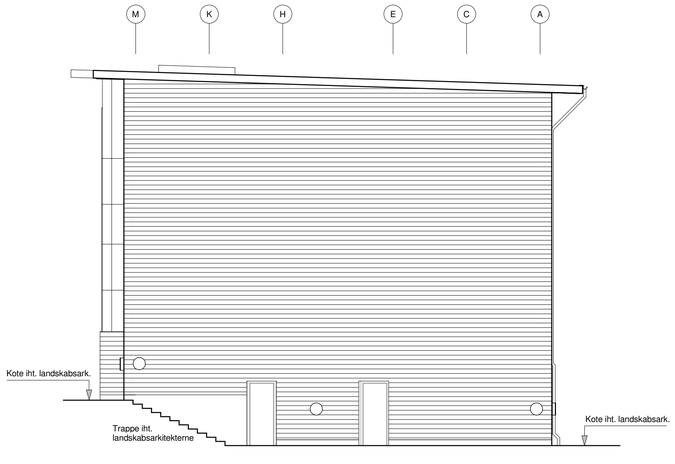
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVAS arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0680
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Nord og syd facade blok 13 - fremtidige forhold

NR **A-212**



Øst gavl



Vest gavl

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 100
	09.02.09	SL	ALL/AD		

KOLSTRUP

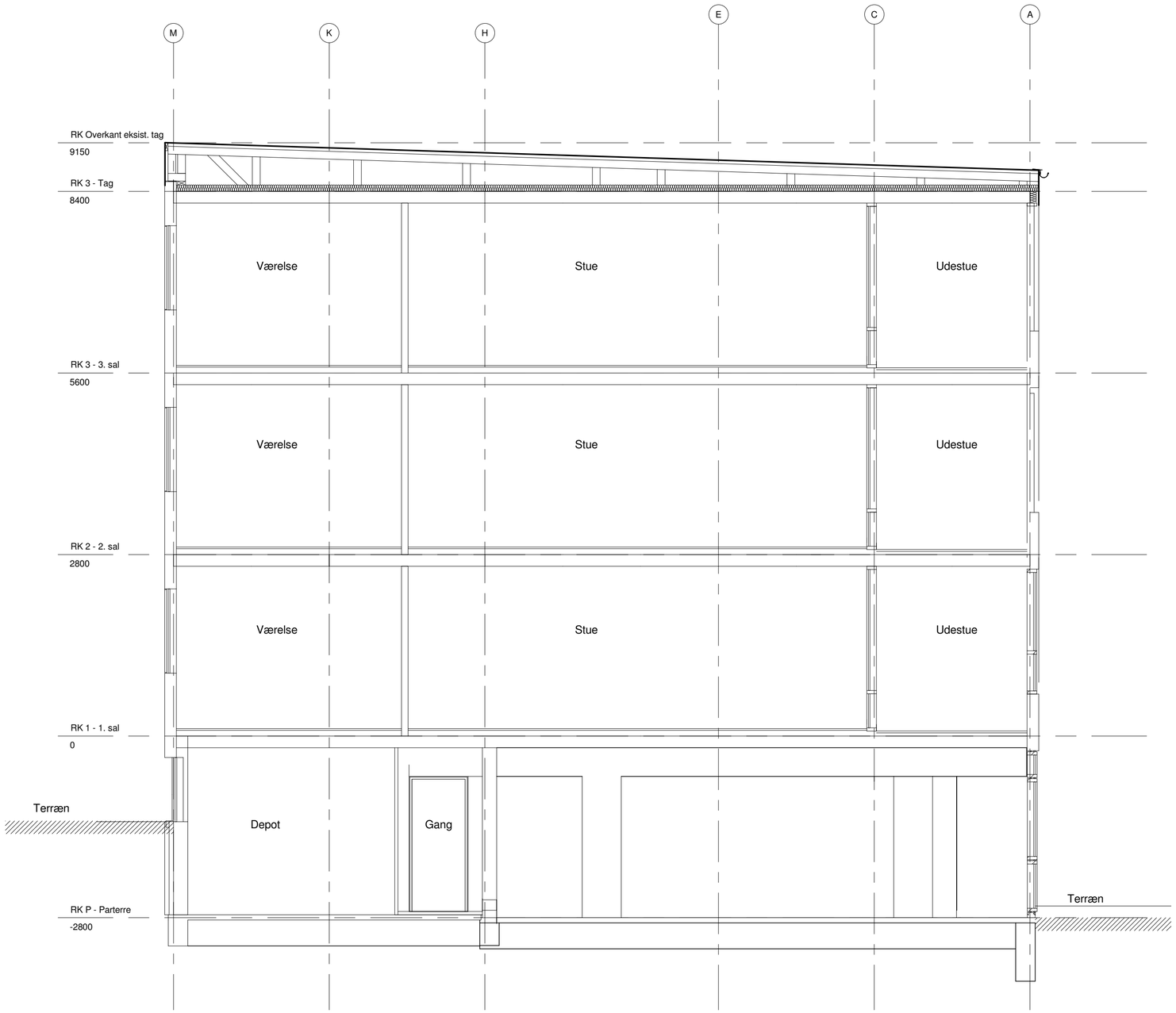
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Øst og vest gavle blok 13 - fremtidige forhold

NR A-213



NR. **A-301**

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL		1 : 50

KOLSTRUP

BOLIGFORENING AFD. 16

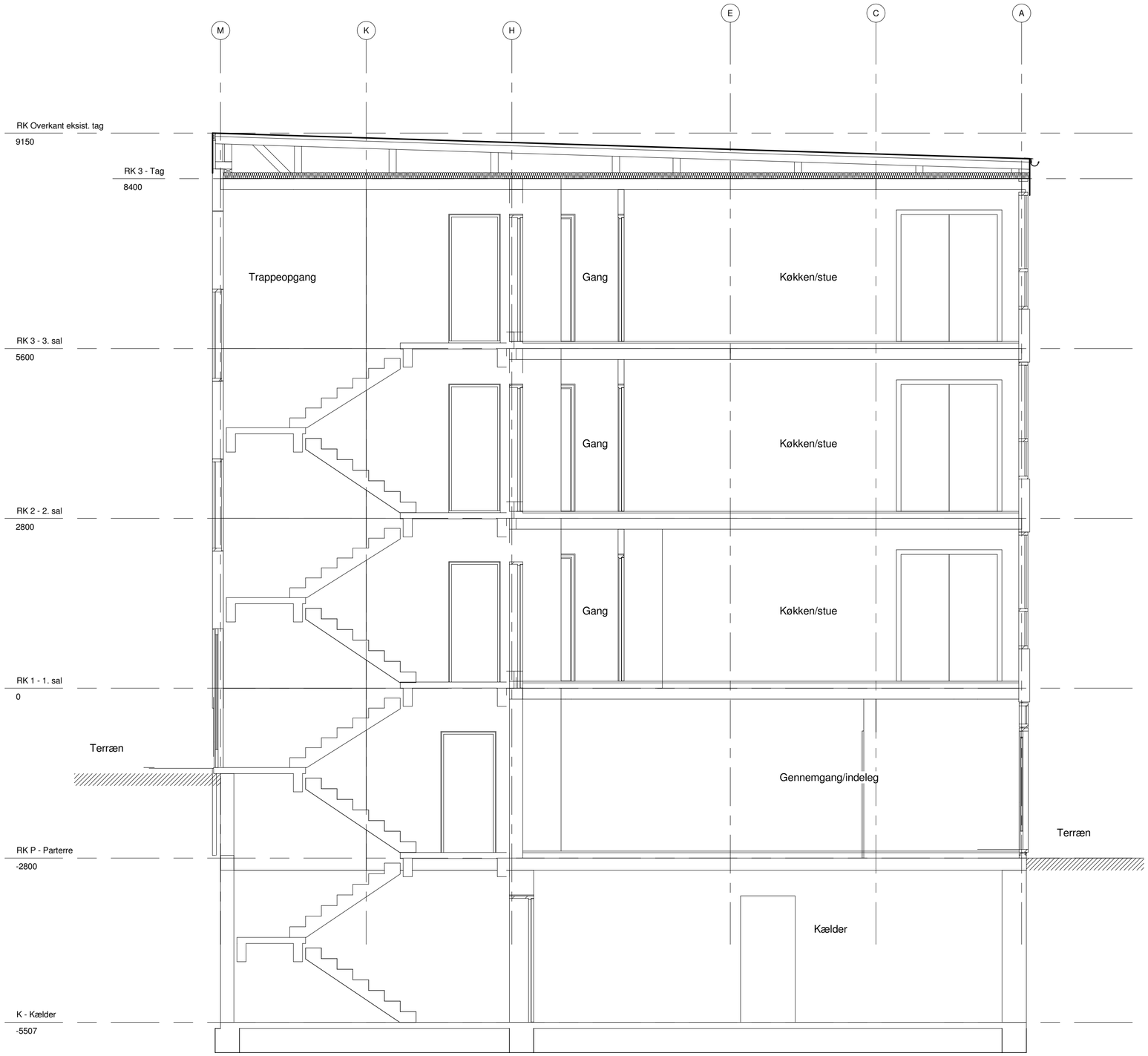
NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16

● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Tværsnit i bolig blok 13 og 14 - eksisterende forhold

NR **A-301**



NR. **A-302**

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL		1 : 50

KOLSTRUP

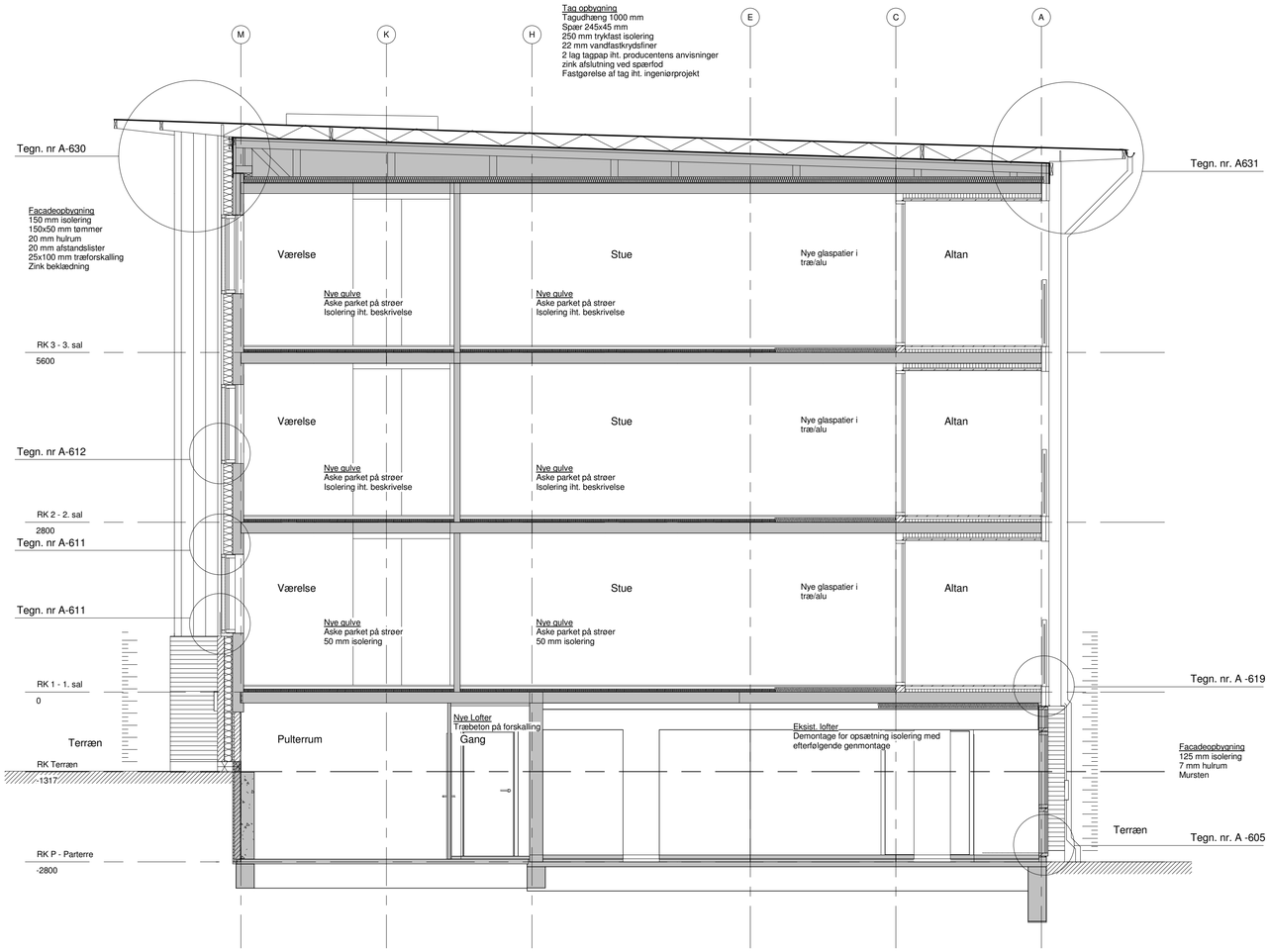
BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16

● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Tværsnit i trapperum blok 13 og 14 - Eksisterende forhold

NR **A-302**



NR. **A-310**

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL		1 : 50

KOLSTRUP

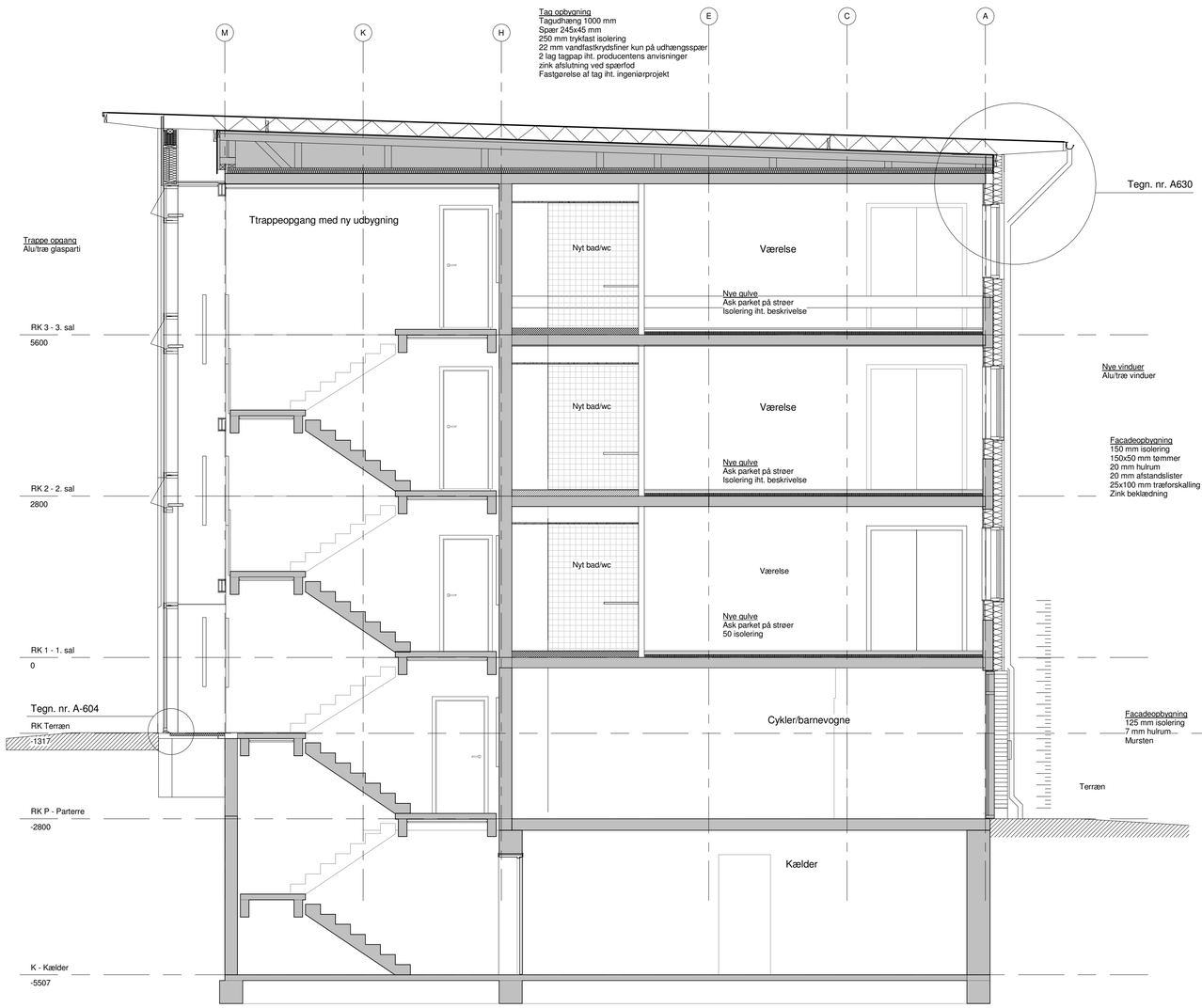
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T +45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Tværsnit AA i bolig blok 13 - fremtidige forhold

NR **A-310**



NR. **A-311**

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL		1 : 50

KOLSTRUP

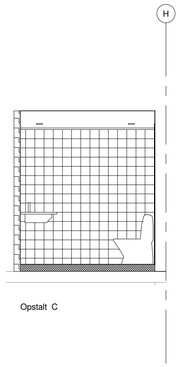
BOLIGFORENING AFD. 16

NOVA5

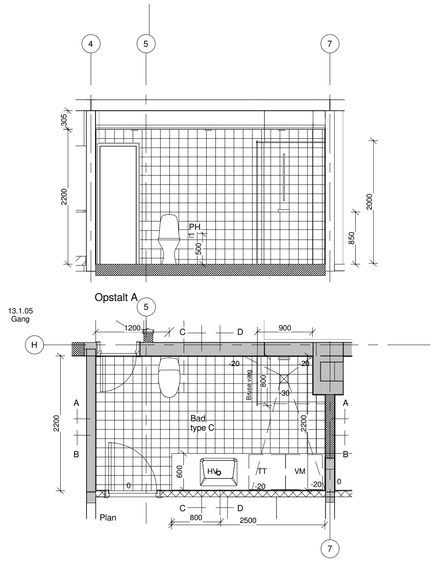
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waina landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

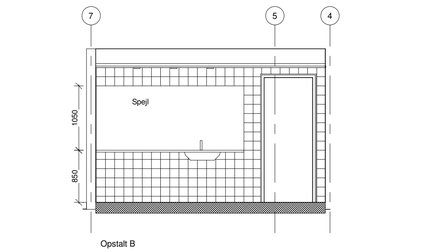
Tværsnit BB i trapperum blok 13 - fremtidige forhold

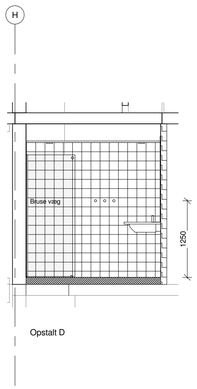
NR **A-311**



Opstalt C







NR. **A-500**

Signatur

Brusevæg	Glas bruse væg i matteret hærdet sikkerhedsglas incl. vægprofil samt gulvbeslag i rustfri stål. forhængsstang i krom.(som eller Royal scandinavian RS900 fast væg).
Bordplade	Laminatbordplade ophængt på vinklerbeslag C/C 400 mm på væg og forberedt til montage af håndvask. farve grå. I hul skal der udføres laminatkant. Farve prøve skal godkendes af tilsyn.
PH	Toiletpapirholder i krom med bagplade
KR	håndklædekroge i krom
Brusesæt	Brusehovede inkl. slange, brusestang min. 600 mm til væg montage, bruseholder til håndbruser i krom
Spejl	Vådrumspejl med indkapslet sølvbelægning, til indmuring, hvor spejle opdeles skal kanter være poleret.
Loft	Der monteres fastgips loft på stållægter.
Sk	Højskab med hvidlakeret låge/frisider til loft.Greb stål stang 116 mm.
B.batteri	Bruse termostatbatteri krom med vandsparefunktion til væg montage, se ingeniør projekt
H.batteri	Håndvaskebatteri krom med træk-op/bundventil med keramisk kartouche, se ing.beskrivelsen
HV	Hvidt porcelæns håndvask for limning under bordplade. Hul for blandingsbatteri skal være en del af enhed. Se ingeniør projekt
WC	Hvidt porcelæns wc gulvmonteret Se ingeniør projekt
VM/TT	Installationer til vaskemaskine og tørretumbler se ingeniør projekt.
Belysning	Der opsættes spot i loft, se ingeniør projekt

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 50
	09.02.09	ALL	AD		

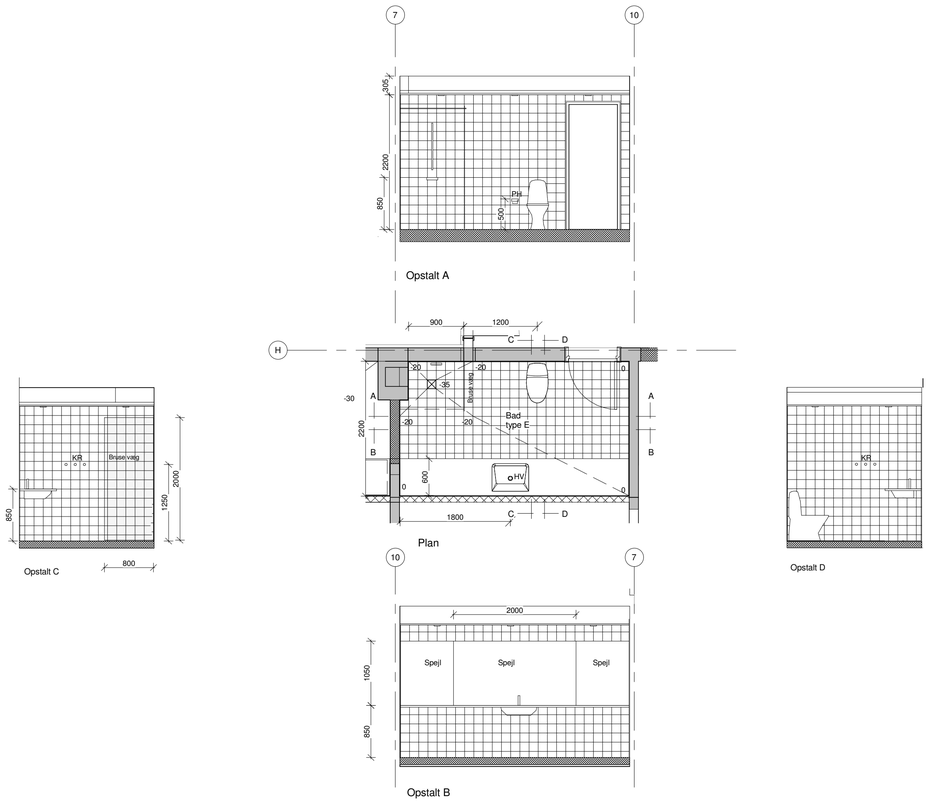
KOLSTRUP

BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Badeværelse Type C - plan og opstalter NR **A-500**



NR. **A-501**

Signatur

Brusevæg	Glas bruse væg i matteret hærdet sikkerhedsglas incl. vægprofil samt gulvbeslag i rustfri stål. forhængsstang i krom.(som eller Royal scandinavian RS900 fast væg).
Bordplade	Laminatbordplade ophængt på vinklerbeslag C/C 400 mm på væg og forberedt til montage af håndvask. farve grå. I hul skal der udføres laminatkant. Farve prøve skal godkendes af tilsyn.
PH	Toiletpapirholder i krom med bagplade
KR	håndklædekroge i krom
Brusesæt	Brusehovede inkl. slange, brusestang min. 600 mm til væg montage, bruseholder til håndbruser i krom
Spejl	Vådrumspejl med indkapslet sølvbelægning, til indmuring, hvor spejle opdeles skal kanter være poleret.
Loft	Der monteres fastgips loft på stålægter.
Sk	Højskab med hvidlakeret låge/frisider til loft.Greb stål stang 116 mm.
B.batteri	Bruse termostatbatteri krom med vandsparefunktion til væg montage, se ingeniør projekt
H.batteri	Håndvaskebatteri krom med træk-op/bundventil med keramisk kartouche, se ing.beskrivelsen
HV	Hvidt porcelæns håndvask for limning under bordplade. Hul for blandingsbatteri skal være en del af enhed. Se ingeniør projekt
WC	Hvidt porcelæns wc gulvmonteret Se ingeniør projekt
VM/TT	Installationer til vaskemaskine og tørretumbler se ingeniør projekt.
Belysning	Der opsættes spot i loft, se ingeniør projekt

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 50
	09.02.09	ALL	AD		

KOLSTRUP

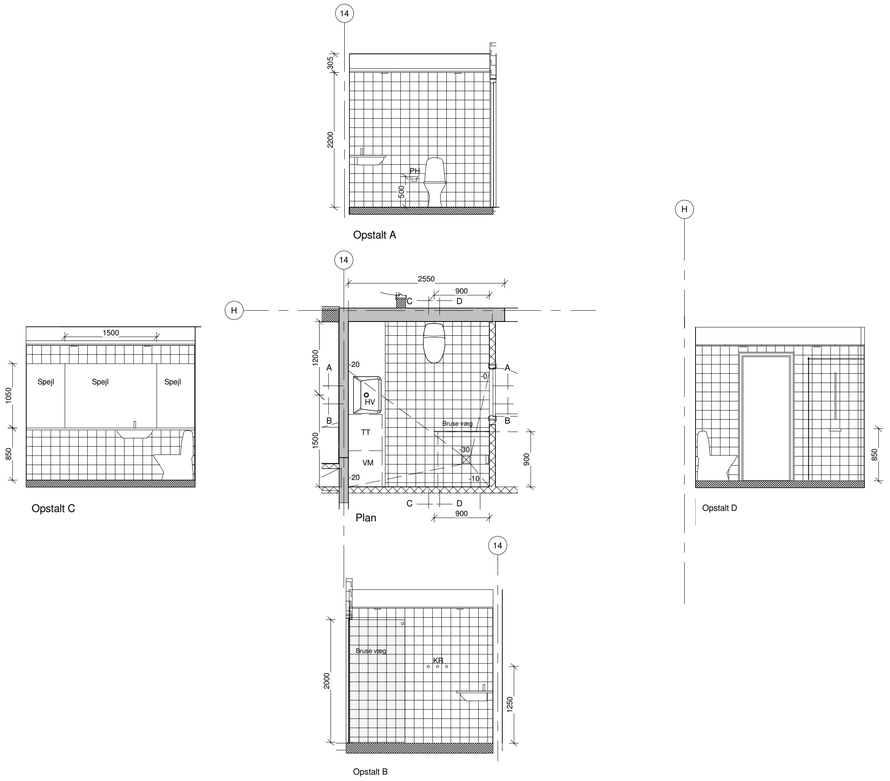
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Badeværelse type E - plan og opstalter

NR **A-501**



NR. **A-502**

Signatur

Brusevæg	Glas bruse væg i matteret hærdet sikkerhedsglas incl. vægprofil samt gulvbeslag i rustfri stål. forhængsstang i krom.(som eller Royal scandinavian RS900 fast væg).
Bordplade	Laminatbordplade ophængt på vinklerbeslag C/C 400 mm på væg og forberedt til montage af håndvask. farve grå. I hul skal der udføres laminatkant. Farve prøve skal godkendes af tilsyn.
PH	Toiletpapirholder i krom med bagplade
KR	håndklædekroge i krom
Brusesæt	Brusehovede inkl. slange, brusestang min. 600 mm til væg montage, bruseholder til håndbruser i krom
Spejl	Vådrumspejl med indkapslet sølvbelægning, til indmuring, hvor spejle opdeles skal kanter være poleret.
Loft	Der monteres fastgips loft på stållægter.
Sk	Højskab med hvidlakeret låge/frisider til loft.Greb stål stang 116 mm.
B.batteri	Bruse termostatbatteri krom med vandsparefunktion til væg montage, se ingeniør projekt
H.batteri	Håndvaskebatteri krom med træk-op/bundventil med keramisk kartouche, se ing.beskrivelsen
HV	Hvidt porcelæns håndvask for limning under bordplade. Hul for blandingsbatteri skal være en del af enhed. Se ingeniør projekt
WC	Hvidt porcelæns wc gulvmonteret Se ingeniør projekt
VM/TT	Installationer til vaskemaskine og tørretumbler se ingeniør projekt.
Belysning	Der opsættes spot i loft, se ingeniør projekt

REV	DATO	TEGN	KS	SAG 07.334	MÅL	1 : 50
	09.02.09	ALL	AD			

KOLSTRUP

BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waina landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Badeværelse type A - plan og opstalter

NR **A-502**

Opstalt A

Opstalt C

Plan

Opstalt D

Opstalt B

NR. **A-503**

Signatur

Brusevæg	Glas bruse væg i matteret hærdet sikkerhedsglas incl. vægprofil samt gulvbeslag i rustfri stål. forhængsstang i krom.(som eller Royal scandinavian RS900 fast væg).
Bordplade	Laminatbordplade ophængt på vinklerbeslag C/C 400 mm på væg og forberedt til montage af håndvask. farve grå. I hul skal der udføres laminatkant. Farve prøve skal godkendes af tilsyn.
PH	Toiletpapirholder i krom med bagplade
KR	håndklædekroge i krom
Brusesæt	Brusehovede inkl. slange, brusestang min. 600 mm til væg montage, bruseholder til håndbruser i krom
Spejl	Vådrumspejl med indkapslet sølvbelægning, til indmuring, hvor spejle opdeles skal kanter være poleret.
Loft	Der monteres fastgips loft på stålægter.
Sk	Højskab med hvidlakeret låge/frisider til loft.Greb stål stang 116 mm.
B.batteri	Bruse termostatbatteri krom med vandsparefunktion til væg montage, se ingeniør projekt
H.batteri	Håndvaskebatteri krom med træk-op/bundventil med keramisk kartouche, se ing.beskrivelsen
HV	Hvidt porcelæns håndvask for limning under bordplade. Hul for blandingsbatteri skal være en del af enhed. Se ingeniør projekt
WC	Hvidt porcelæns wc gulvmonteret Se ingeniør projekt
VM/TT	Installationer til vaskemaskine og tørretumbler se ingeniør projekt.
Belysning	Der opsættes spot i loft, se ingeniør projekt

REV	DATO	TEGN	KS	SAG 07.334	MÅL	1 : 50
	09.02.09	ALL	AD			

KOLSTRUP

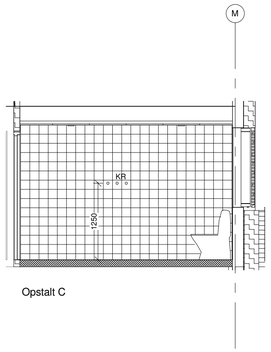
BOLIGFORENING AFD. 16

NOVA5

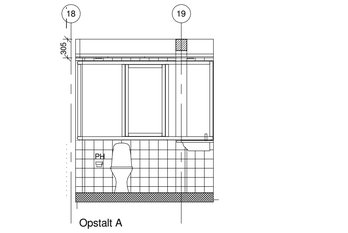
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Badeværelse type B - plan og opstalter

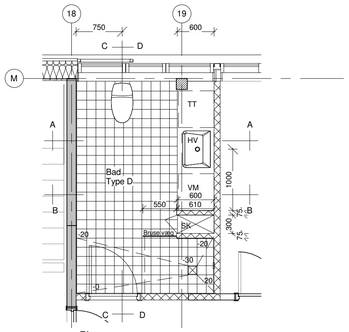
NR **A-503**



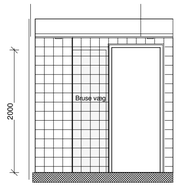
Opstalt C



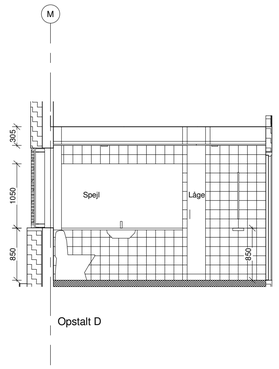
Opstalt A



Plan



Opstalt B



Opstalt D

NR. **A-504**

Signatur

Brusevæg	Glas bruse væg i matteret hærdet sikkerhedsglas incl. vægprofil samt gulvbeslag i rustfri stål. forhængsstang i krom.(som eller Royal scandinavian RS900 fast væg).
Bordplade	Laminatbordplade ophængt på vinklerbeslag C/C 400 mm på væg og forberedt til montage af håndvask. farve grå. I hul skal der udføres laminatkant. Farve prøve skal godkendes af tilsyn.
PH	Toiletpapirholder i krom med bagplade
KR	håndklædekroge i krom
Brusesæt	Brusehovede inkl. slange, brusestang min. 600 mm til væg montage, bruseholder til håndbruser i krom
Spejl	Vådrumspejl med indkapslet sølvbelægning, til indmuring, hvor spejle opdeles skal kanter være poleret.
Loft	Der monteres fastgips loft på stållægter.
Sk	Højskab med hvidlakeret låge/frisider til loft.Greb stål stang 116 mm.
B.batteri	Bruse termostatbatteri krom med vandsparefunktion til væg montage, se ingeniør projekt
H.batteri	Håndvaskebatteri krom med træk-op/bundventil med keramisk kartouche, se ing.beskrivelsen
HV	Hvidt porcelæns håndvask for limning under bordplade. Hul for blandingsbatteri skal være en del af enhed. Se ingeniør projekt
WC	Hvidt porcelæns wc gulvmonteret Se ingeniør projekt
VM/TT	Installationer til vaskemaskine og tørretumbler se ingeniør projekt.
Belysning	Der opsættes spot i loft, se ingeniør projekt

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 50
	09.02.09	ALL	AD		

KOLSTRUP

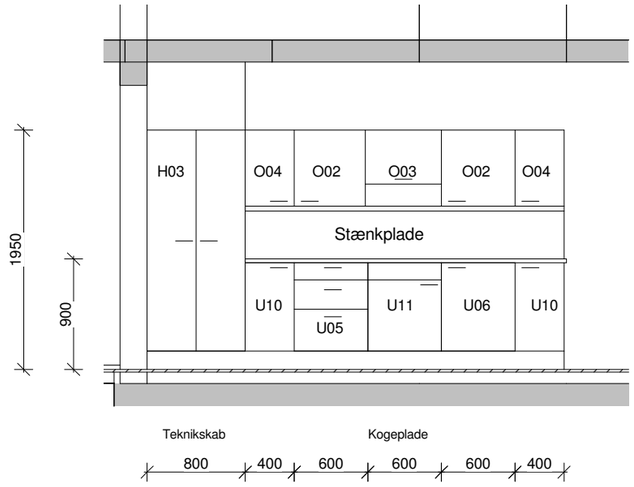
BOLIGFORENING AFD. 16

NOVA5

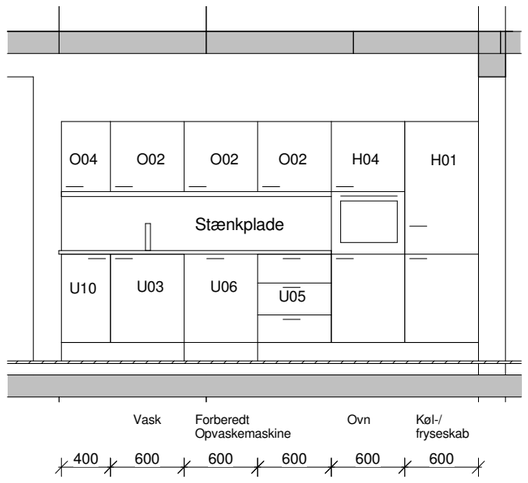
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waina landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Badeværelse type D - plan og opstalt

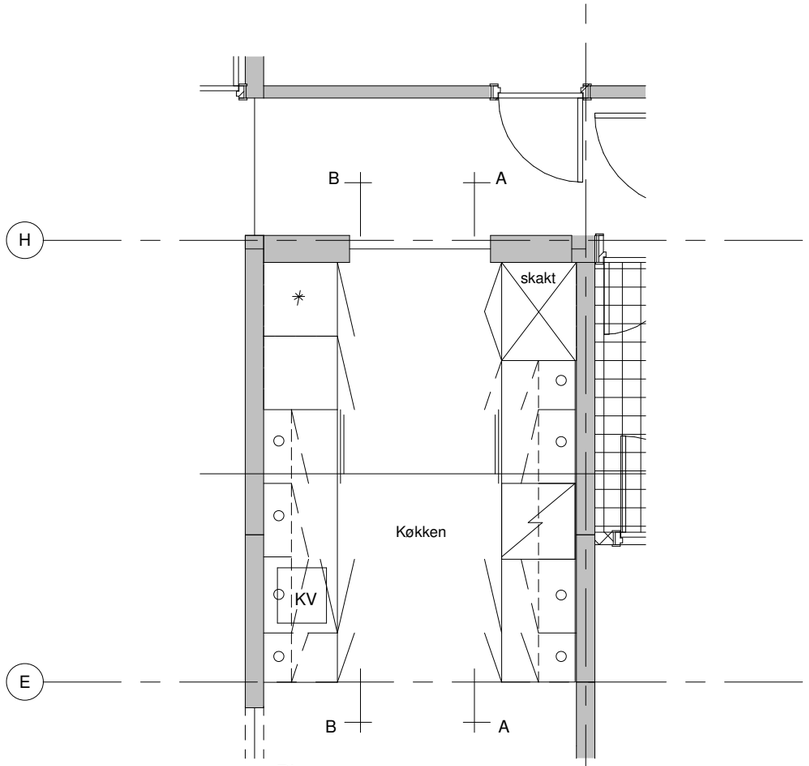
NR **A-504**



Opstalt A - A



Opstalt B - B



Plan

NR. **A-510**

Underskabe (højde 700 mm) med retvinklet kanter og hvidlakeret låger/frisider

U03 Vaskeskab med indsats og affaldsstativ
U05 Skab med 3 skuffer
U06 Skab med 1 hylde
U10 Skab med 1 hylde (ende med friside)
U11 Skab med plads til kogeplade samt låge

Overskabe (højde 570 mm) med retvinklet kanter og hvidlakeret låger/frisider

O02 skab med 1 hylde og påbygningsspot i bund
O03 emhætteskab
O04 Skab med 1 hylde og påbygningsspot i bund (med frisider)

Højskabe (højde 195 mm) med retvinklet kanter og hvidlakeret låger/frisider

H01 indbygningsskab til køle/frys friside hvid. sokkelrist i alu-look
H03 garderobeskab med friside. Der skal være 2 frisider til loft over skab.
Skan skal tilpasse for gennemføringer af installationer.
H04 indbygningsskab til ovn med sokkelrist i alu-look (med friside)

Øvrige

Greb Stålstang - 116 mm
Sokkel i hvid
○ 10W spot i bund af overskabe (påbygningsspot)
div. tilpasningstykker, frontplader i hvid og ophængningbeslag
Bordplade 30 mm med postform, bredde 600 mm, laminat mørk grå kvarts 551
Stænkplade laminat hvid inkl. lister/kanter

Hvidevarer se ingeniør projekt
køkkenvask rustfri stål, 510x530 mm til nedfældning
Køkkenbatteri, se ingeniør projekt

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 50
	09.02.09	ALL	AD		

KOLSTRUP

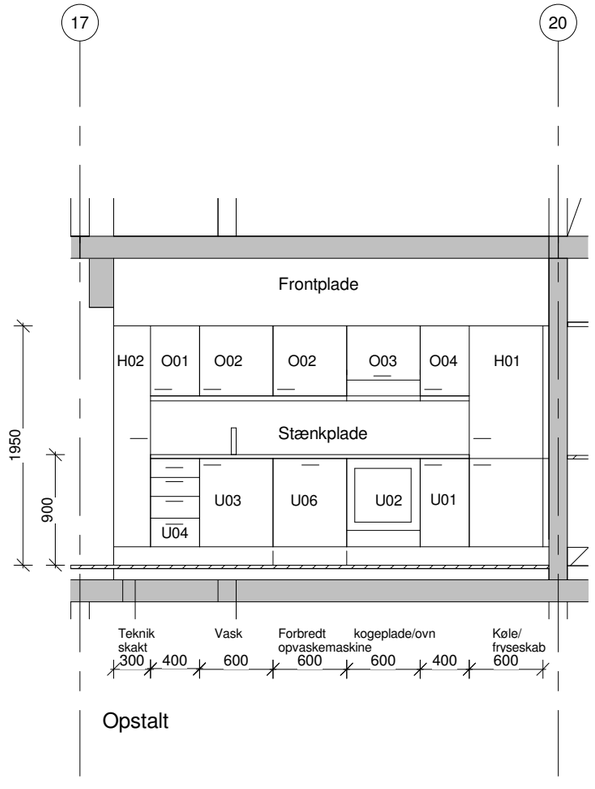
BOLIGFORENING AFD. 16

NOVA5

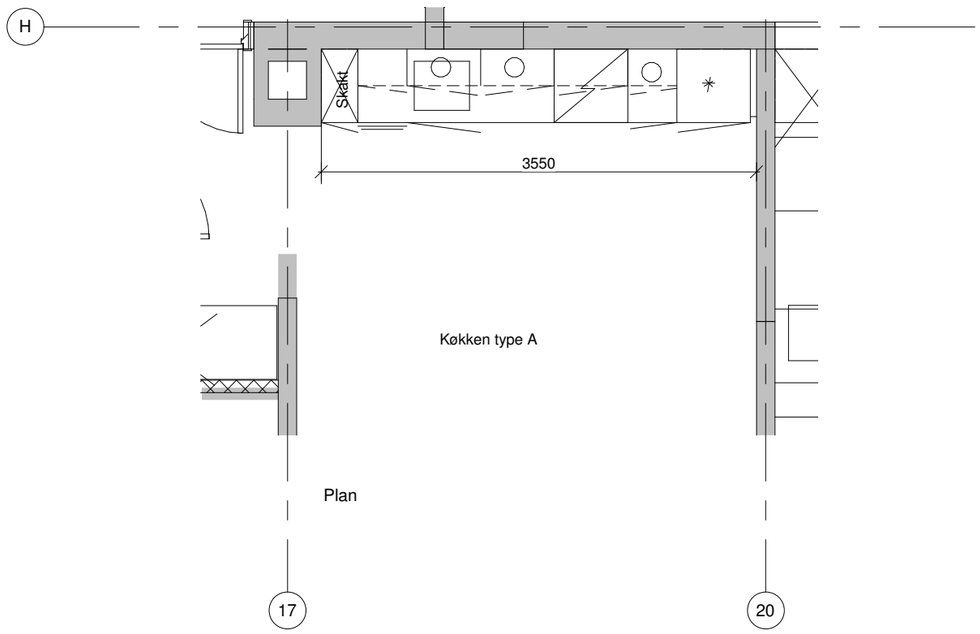
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Køkken type C og E - plan og opstalter

NR **A-510**



Opstalt



Plan

NR. **A-511**

Underskabe (højde 700 mm) med retvinklet kanter og hvidlakeret låger/frisider

U01 underskab med front udtræk
U02 Skab til ovn med forstykke
U03 Vaskeskab med indsats og affaldstativ
U04 skab med 4 skuffer

Højskabe (højde 570 mm)med retvinklet kanter og hvidlakeret låger/frisider

H01 indbygningsskab til køle/frys friside hvid. sokkelrist i alu-look
H02 garderobeskab med friside. Der skal være 2 frisider til loft over skab. Skal tilpasse for gennemføringer installationer.

Overskabe (højde 1950 mm) med retvinklet kanter og hvidlakeret låger/frisider

O01 Skab med 2 hylder og påbygningsspot i bund
O02 skab med 1 hylde og påbygningsspot i bund
O03 emhætteskab
O04 Skab med 1 hylde og påbygningsspot i bund

Øvrige

Greb Stålstang - 116 mm
Sokkel i hvid
10W spot i bund af overskabe (påbygningsspot)
Div. tilpasningstykker, frisider og ophængningsbeslag
Bordplade 30 mm med postkant, bredde 600 mm, laminat mørk gra kvarts 551
Stænkplade laminat hvid inkl. lister/kanter

Hvidevarer se ingeniør projekt
køkkenvask rustfri stål, 510x530 mm til nedfældning
Køkkenbatteri se ingeniør projekt

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 50
	09.02.09	ALL	AD		

KOLSTRUP

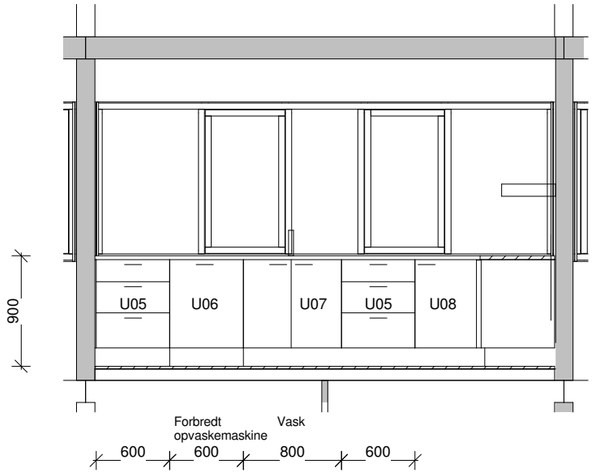
BOLIGFORENING AFD. 16

NOVA5

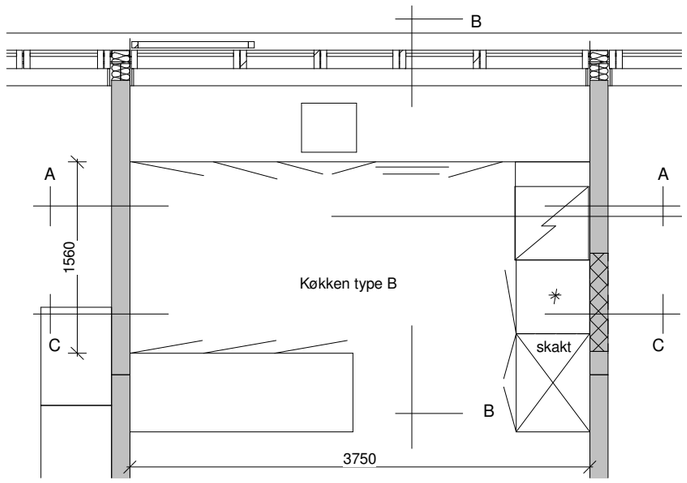
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Køkken type A - plan og opstalt

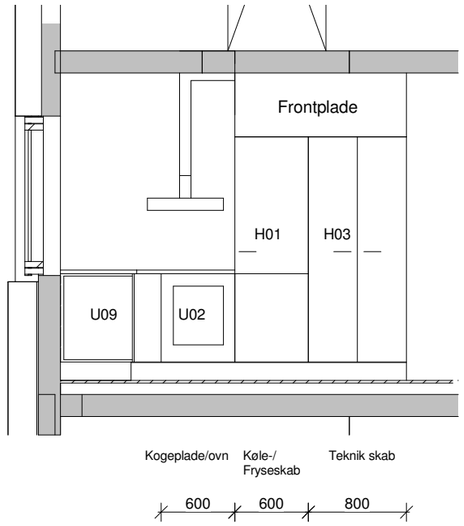
NR **A-511**



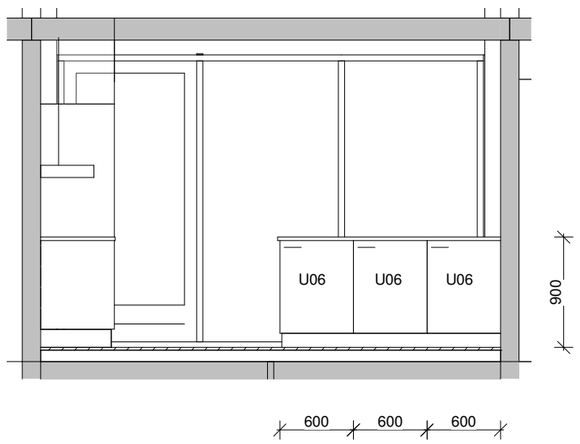
Opstalt A - A



Plan



Opstalt B - B



Opstalt C - C

Underskabe(højde 700 mm) med retvinklet kanter og hvidlakeret låger/frisider

U02 Skab til ovn med forstykke
U05 Skab med 3 skuffer
U06 Skab med 1 hylde(ende skab har friside)
U07 Vaskeskab med indsats og affaldsstativ
U08 Skab med 1 hylde
U09 Hjørneskab med karruseller, blændstykke

Højskabe (højde 570 mm) med retvinklet kanter og hvidlakeret låger/frisider

H01 indbygningsskab til køle/frys friside hvid. sokkelrist i alu-look
H03 garderobeskab med friside. Der skal være 2 frisider til loft over skab. Skab skal tilpasses for gennemføringer af installationer.

Øvrige

Greb Stålstang - 116 mm
Sokkel i hvid
10W spot i bund af overskabe (påbygningsspot)
div. tilpasningstykker, frontplader i hvid samt ophængningsbeslag
Bordplade 30 mm med postform, bredde 600 mm, laminat mørk grå kvarts 551
Stænkplade laminat hvid inkl. lister/kanter

Hvidevarer se ingeniør projekt
køkkenvask rustfri stål, 510x530 mm til nedfældning
Køkkenbatteri se ingeniør projekt

REV	DATO	TEGN		SAG 07.334	MÅL
	09.02.09	ALL	AD		1 : 50

KOLSTRUP

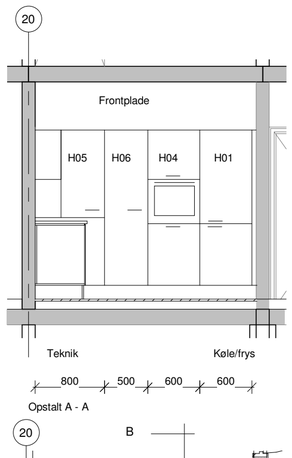
BOLIGFORENING AFD. 16

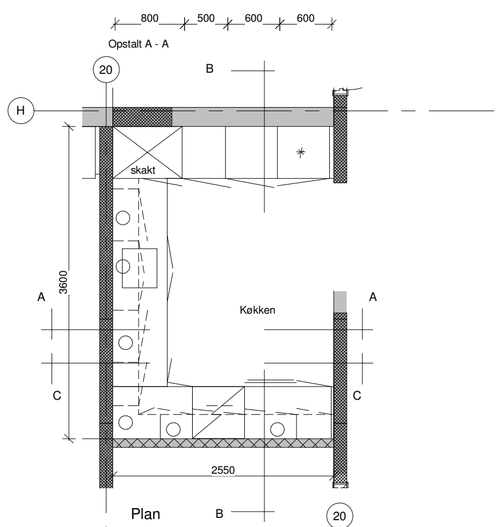
NOVA5

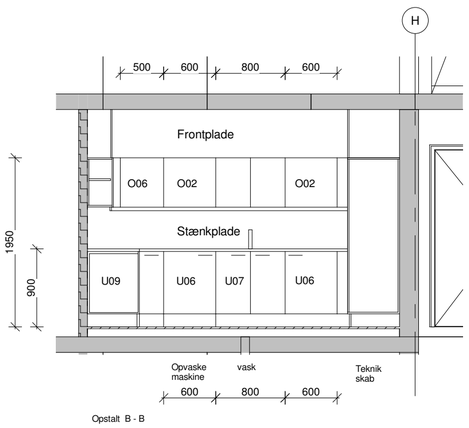
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

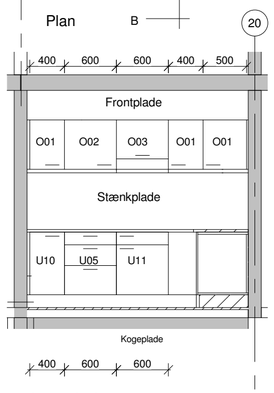
Køkken type B - plan og opstalt

NR A-512









NR. **A-513**

Underskabe (højde 700 mm) med retvinklet kanter og hvidlakeret låger/frisider

U02 skab til ovn med forstykke
U07 vaskeskab med indsats og affaldsstativ
U05 skab med 3 skuffer
U09 hjørneskab med karruseller
U10 Skab med 1 hylde (ende med friside)
U11 Skab med plads til kogeplade samt låge

Overskabe med hvidlakeret låger/frisider

O01 Skab med 2 hylder og påbygningsspot i bund
O02 skab med 1 hylde og påbygningsspot i bund
O03 emhætteskab
O04 Skab med 1 hylde og påbygningsspot i bund (med frisider)
O05 Skab med 1 hylde og påbygningsspot i bund
O06 Skab med 1 hylde og påbygningsspot i bund

Højskabe med hvidlakeret låger/frisider

H01 indbygningsskab til køle/frys friside hvid. sokkelrist i alu-look
H04 indbygningsskab til ovn med sokkelrist i alu-look (med friside)
H05 Garderobeskab som tilpasses incl. låge. Skab skal special tilpasses for installations gennemføringer mm.
H06 Skab med 5 hylder

Øvrige

Greb Stålstang - 116 mm
Sokkel i hvid
○ 10W spot i bund af overskabe
div. tilpasningstykker, frontplader i hvid og ophængningsbeslag
Bordplade 30 mm med postform, bredde 600 mm laminat mørk grå
kvarts 551
Stænkplade laminat hvid inkl. lister/kanter

Hvidevarer se ingeniør projekt
køkkenvask rustfri stål, 510x530 mm til nedfældning
Køkkenbatteri se ingeniør projekt.

REV	DATO	TEGN	KS	SAG 07.334	MÅL	1 : 50
	09.02.09	ALL	AD			

KOLSTRUP

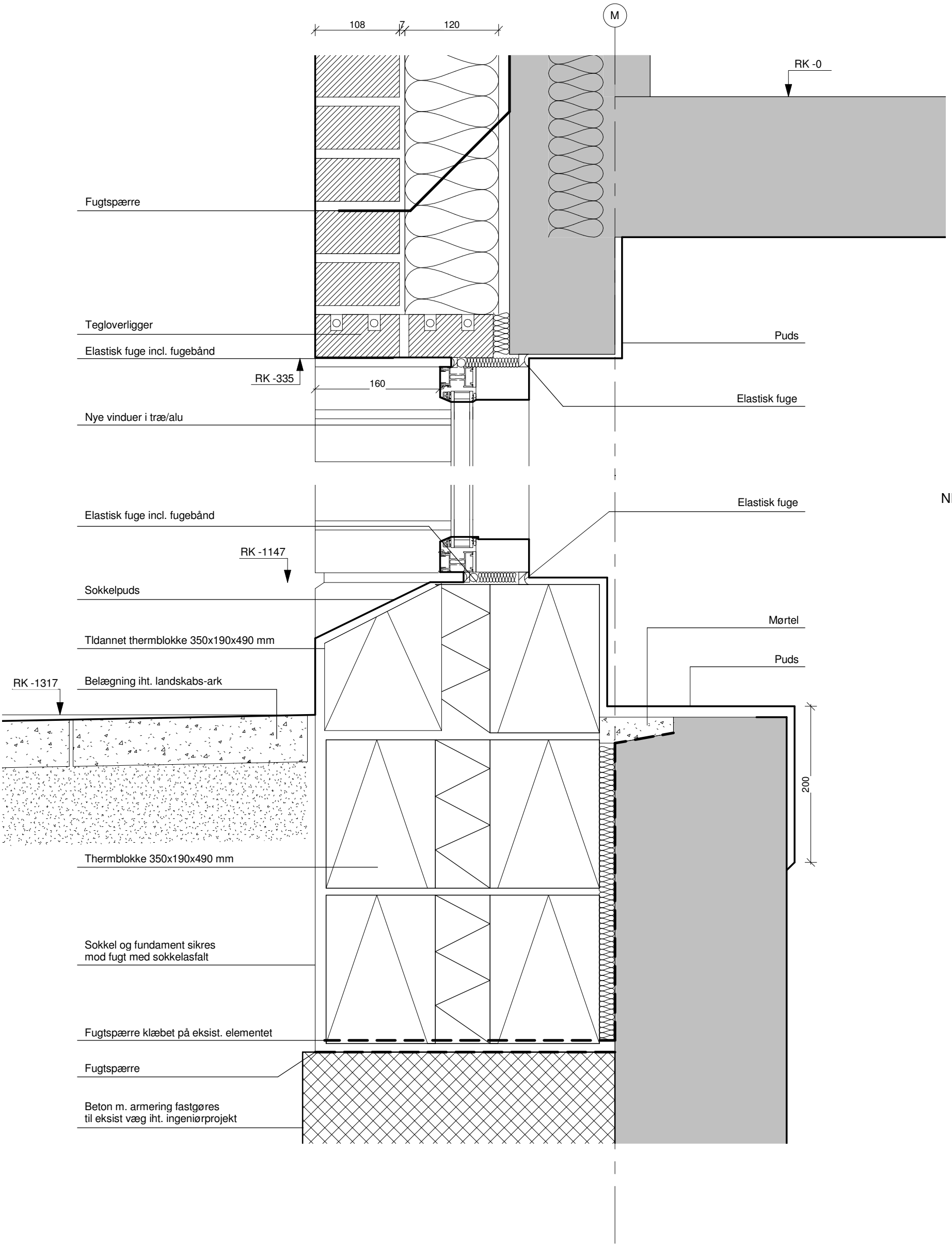
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Køkken type D - plan og opstalt

NR **A-513**



NR. **A-602**

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5
	09.02.09	SL	ALL/AD		

KOLSTRUP

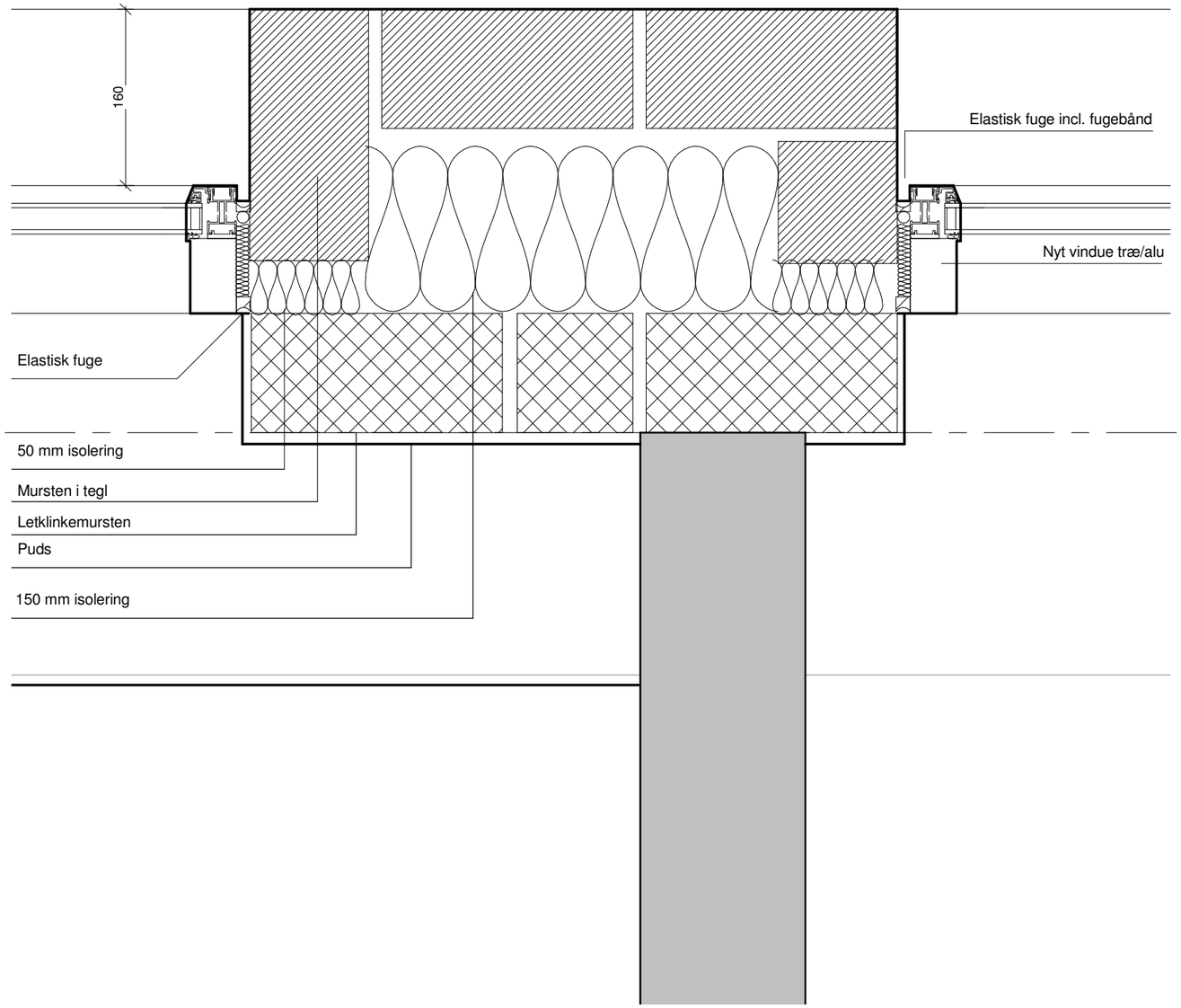
BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Sokkel/fundament

NR **A-602**

NR. **A-603**



REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1 : 5

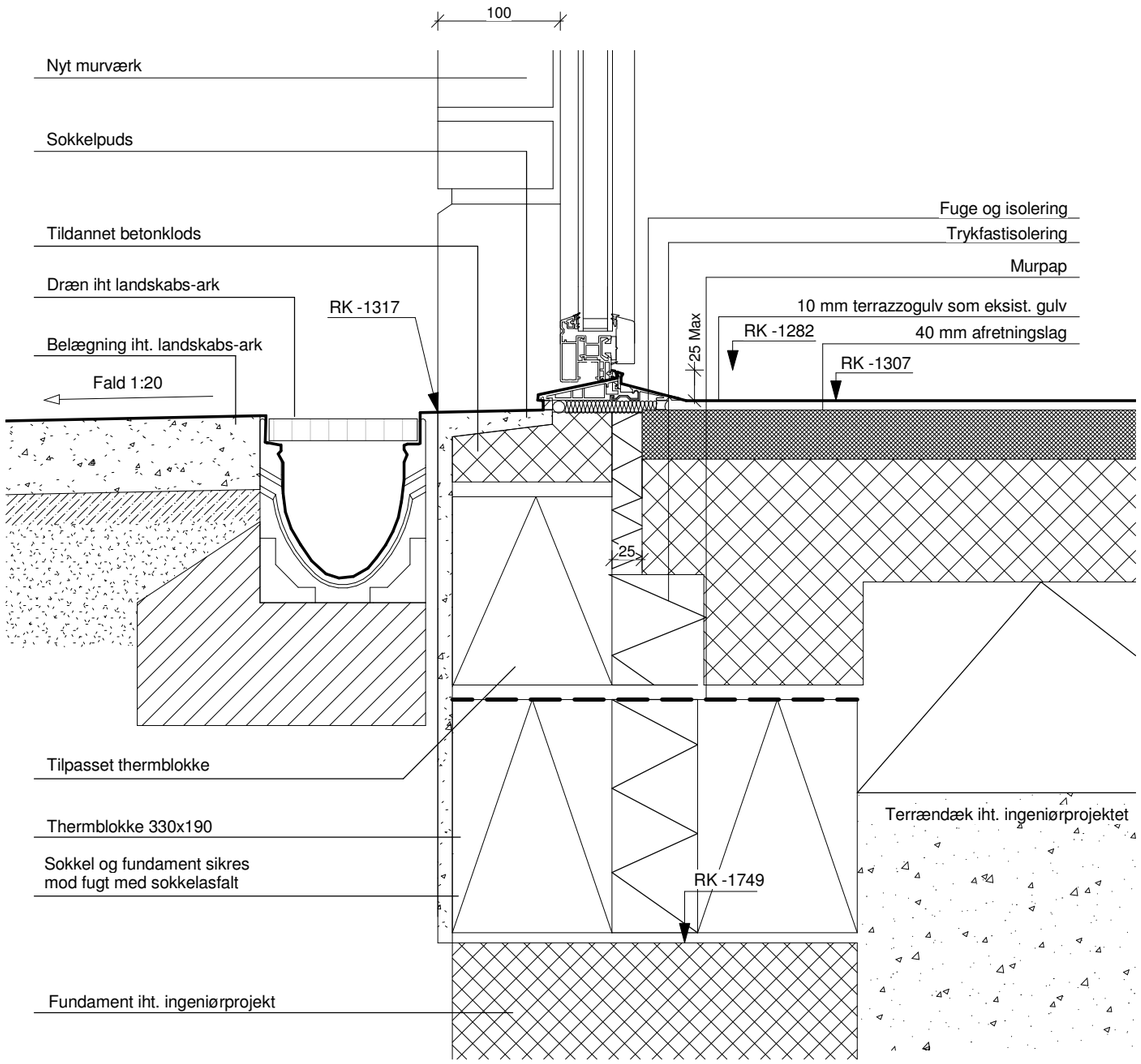
KOLSTRUP

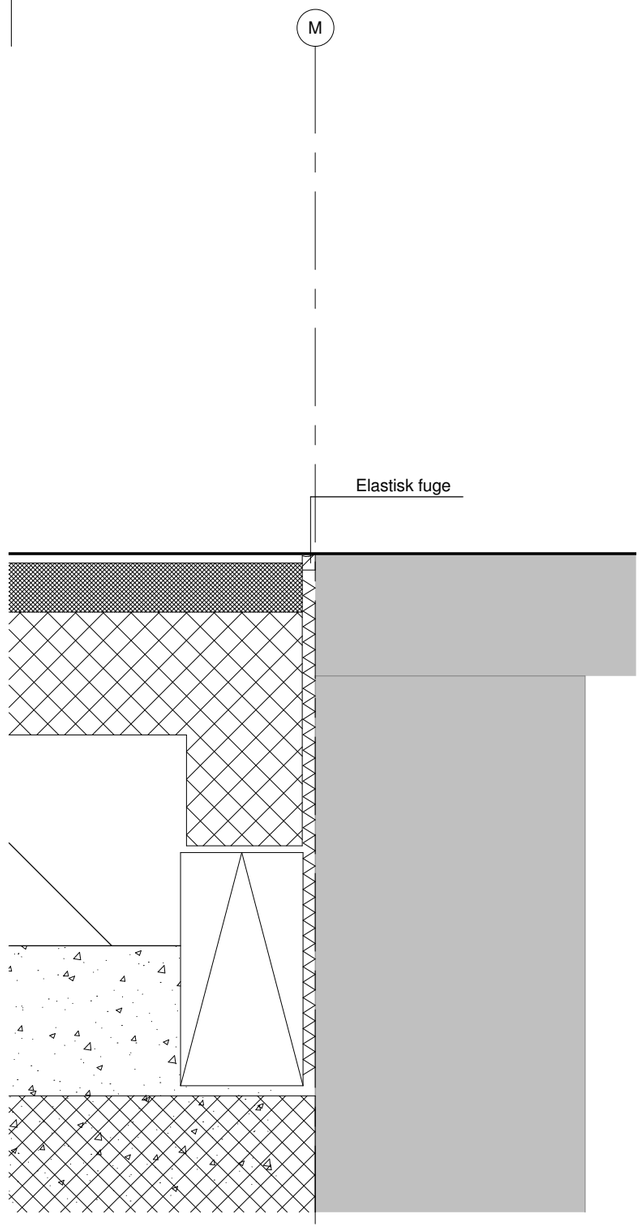
BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Vandret snit - Vindue/facade

NR **A-603**





REV	DATO	TEGN	KS	SAG 07.334	MÅL	1 : 5
	09.02.09	SL	ALL/AD			

KOLSTRUP

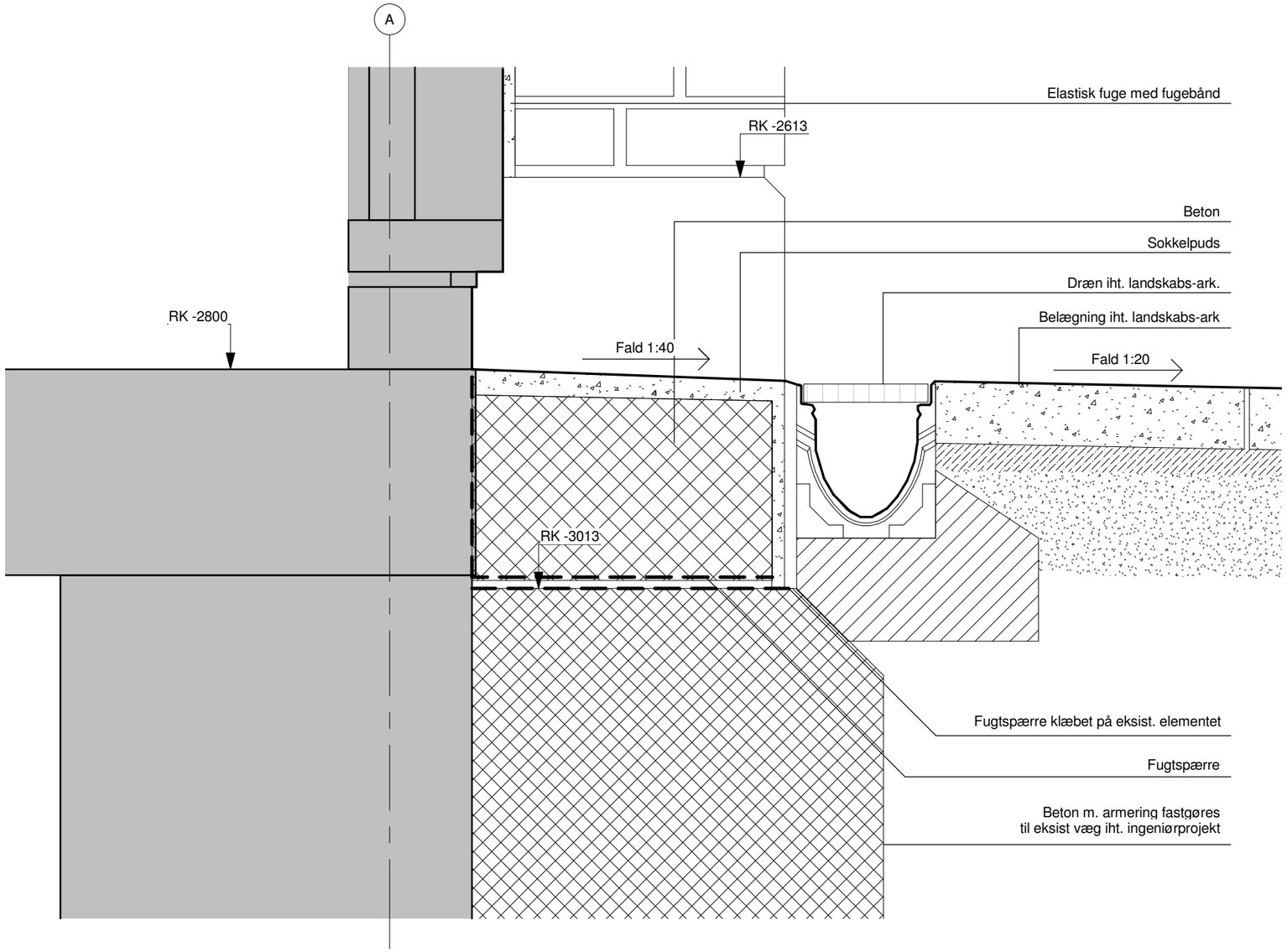
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Sokkel/hovedindgang nord

NR **A-604**



	09.02.09	SL	ALL/AD		
REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5

KOLSTRUP

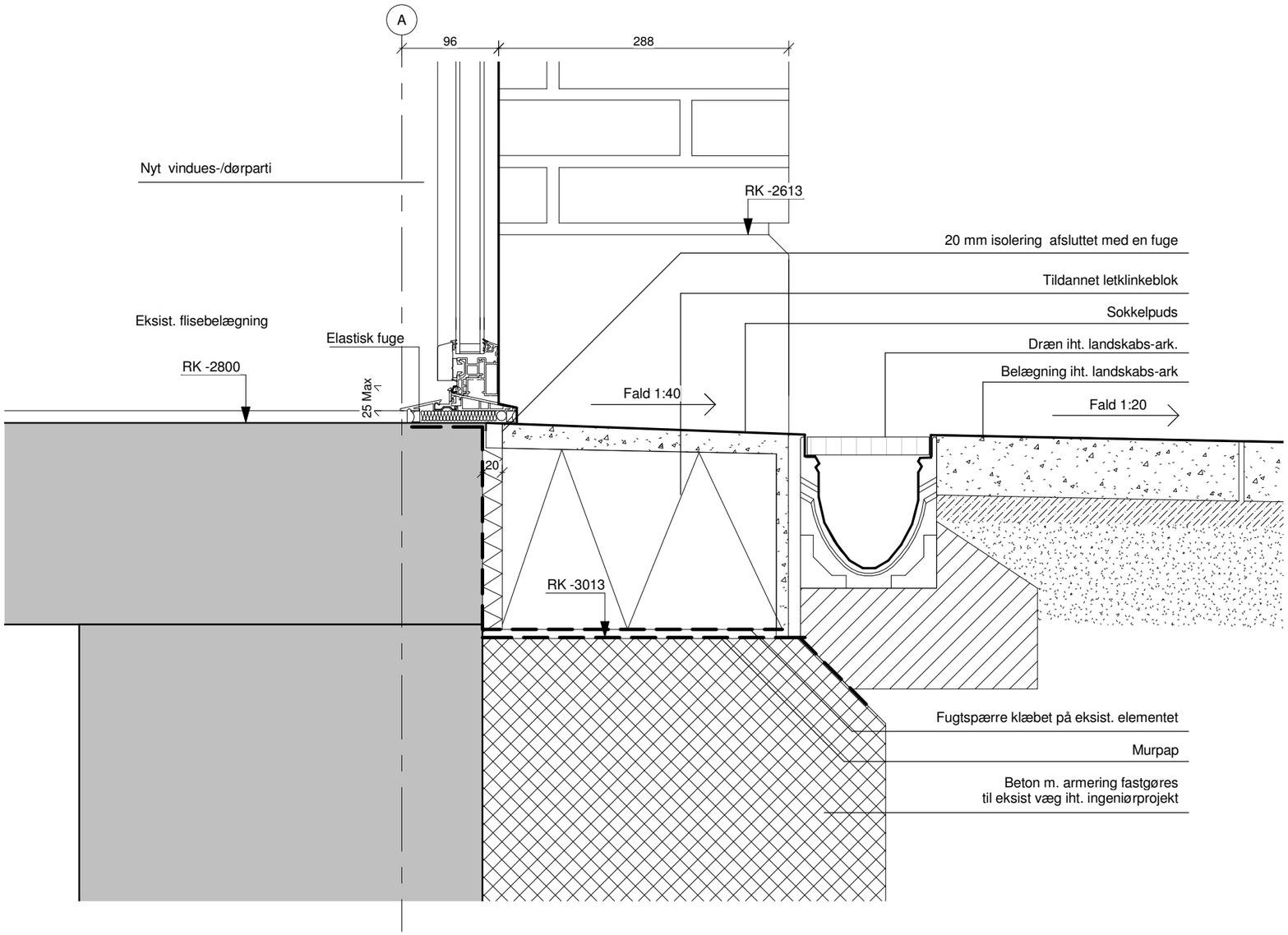
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Sokkel/eksist. facadeparti syd

NR A-605



REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5
	09.02.09	SL	ALL/AD		

KOLSTRUP

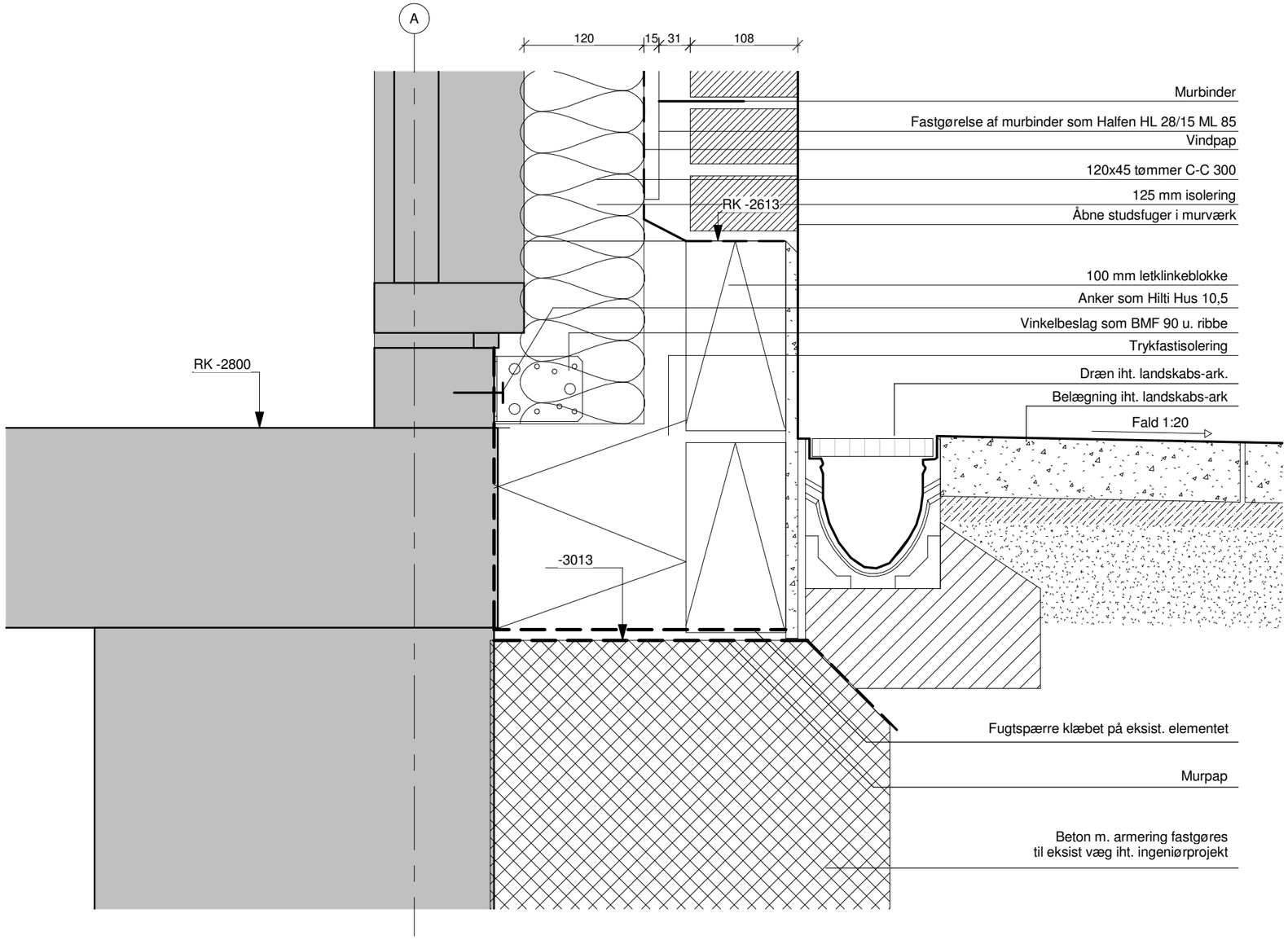
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Sokkel/nyt facadeparti syd

NR A-606



	09.02.09	SL	ALL/AD		
REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5

KOLSTRUP

BOLIGFORENING AFD. 16

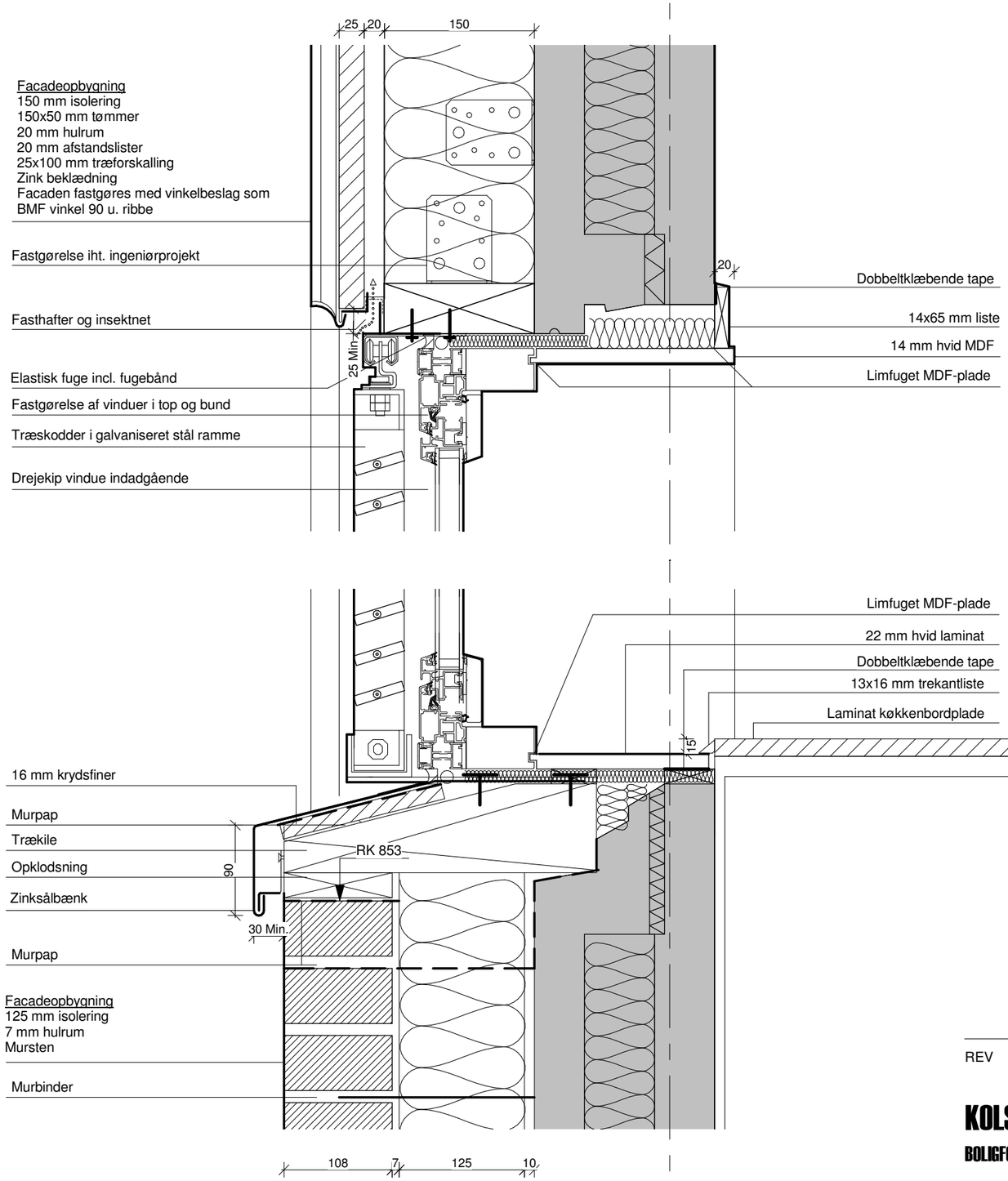
NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Sokkel/mur syd

NR A-607

NR. **A-608**



	09.02.09	SL	ALL/AD		
REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5

KOLSTRUP

BOLIGFORENING AFD. 16

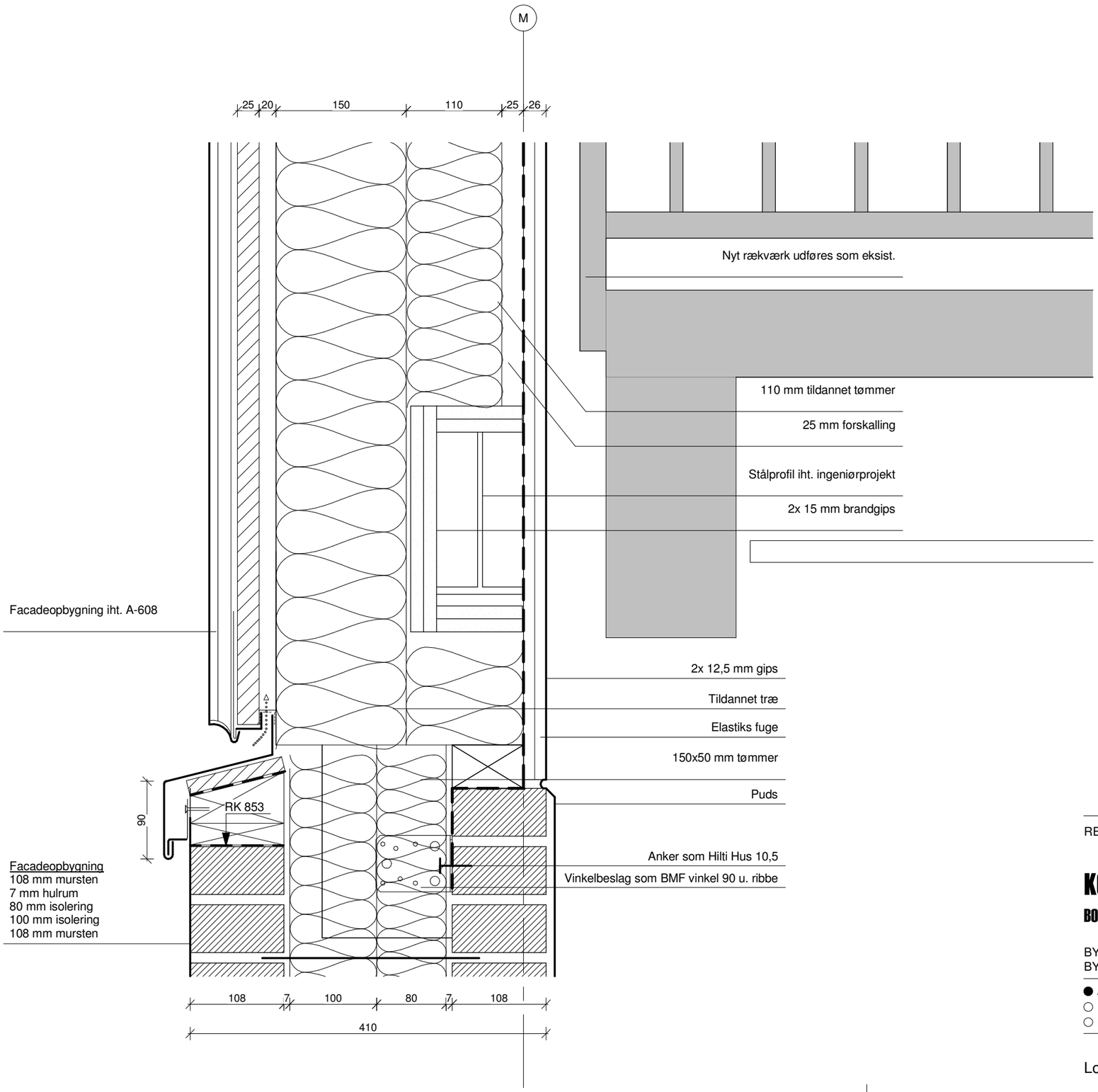
NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16

● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Vindue/køkken type B

NR **A-608**



	09.02.09	SL	ALL/AD		
REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5

KOLSTRUP

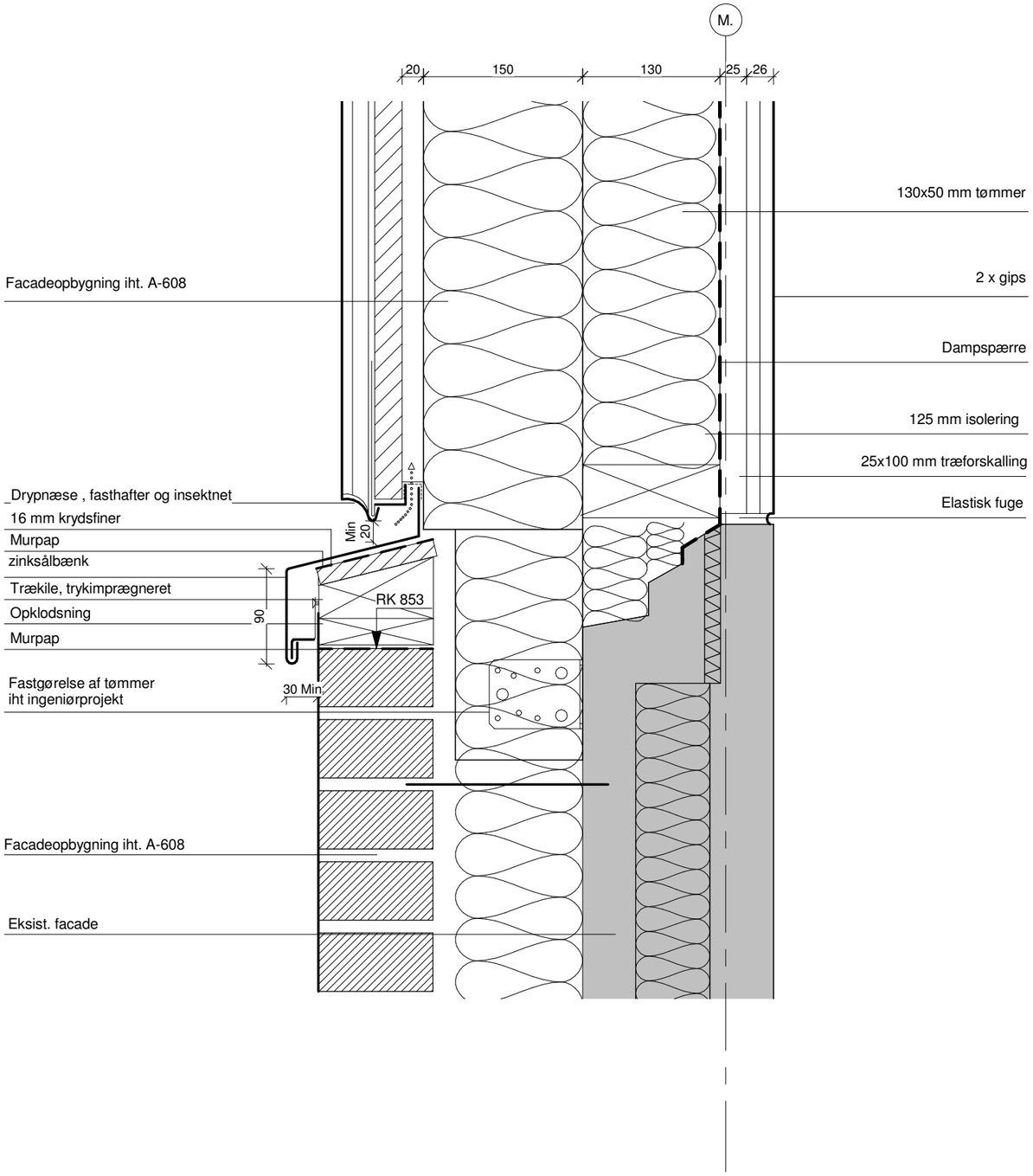
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Tung/letfacade ved indgangsparti nord

NR A-609



REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5
	09.02.09	SL	ALL/AD		

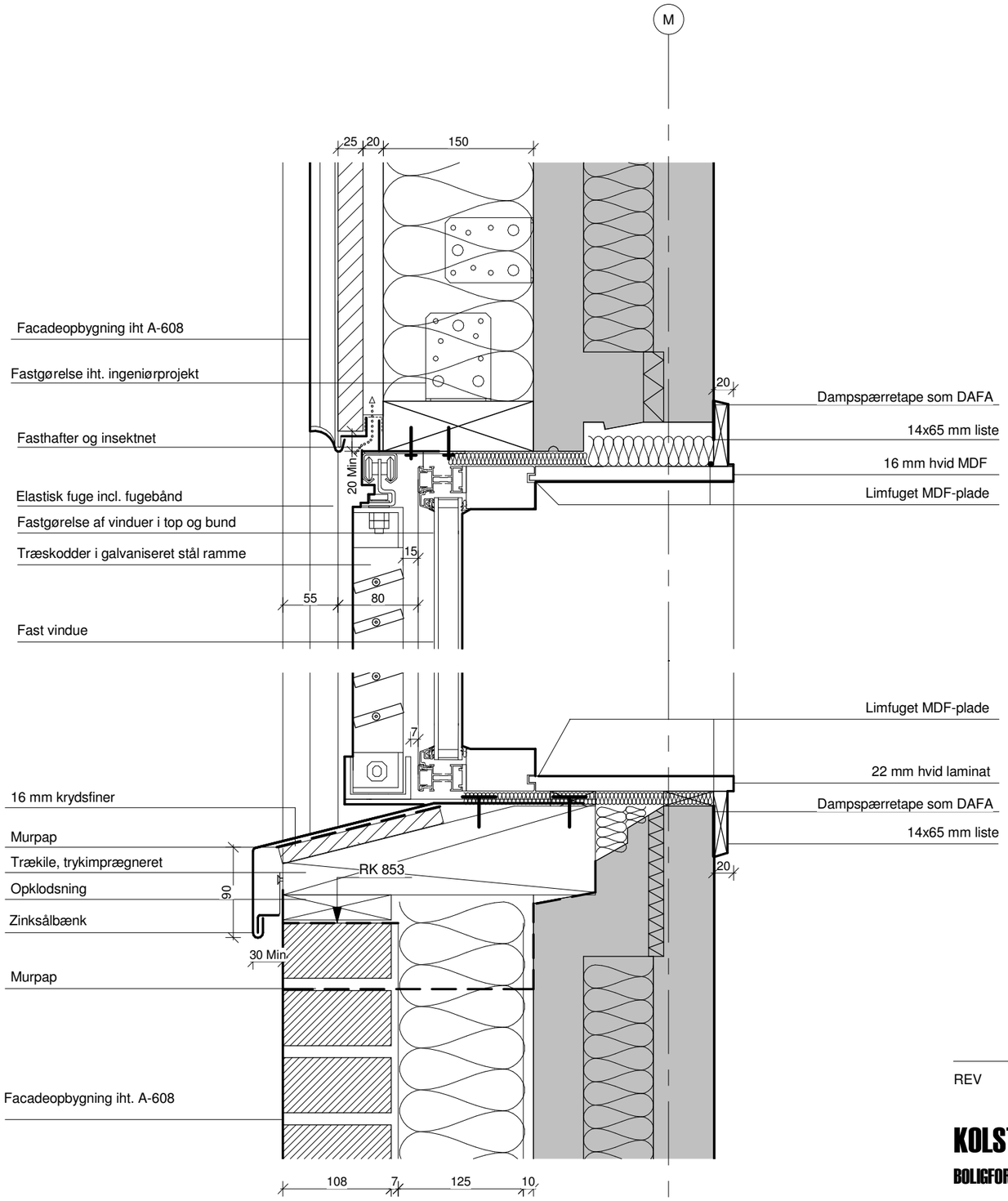
KOLSTRUP

BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Tung- / letydervæg

NR **A-610**



REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1 : 5

KOLSTRUP

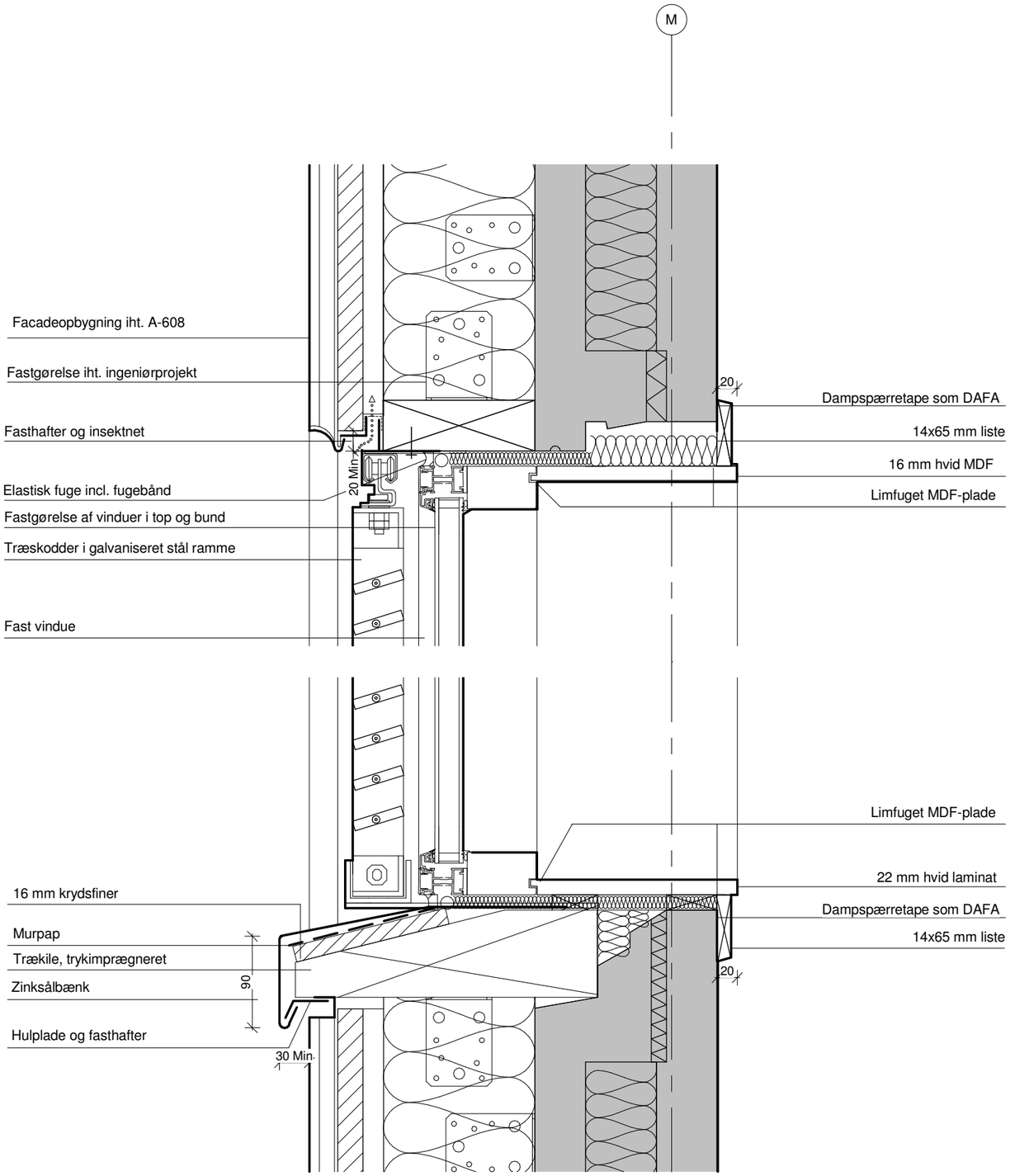
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Vindue/facade

NR A-611



	09.02.09	SL	ALL/AD		
REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5

KOLSTRUP

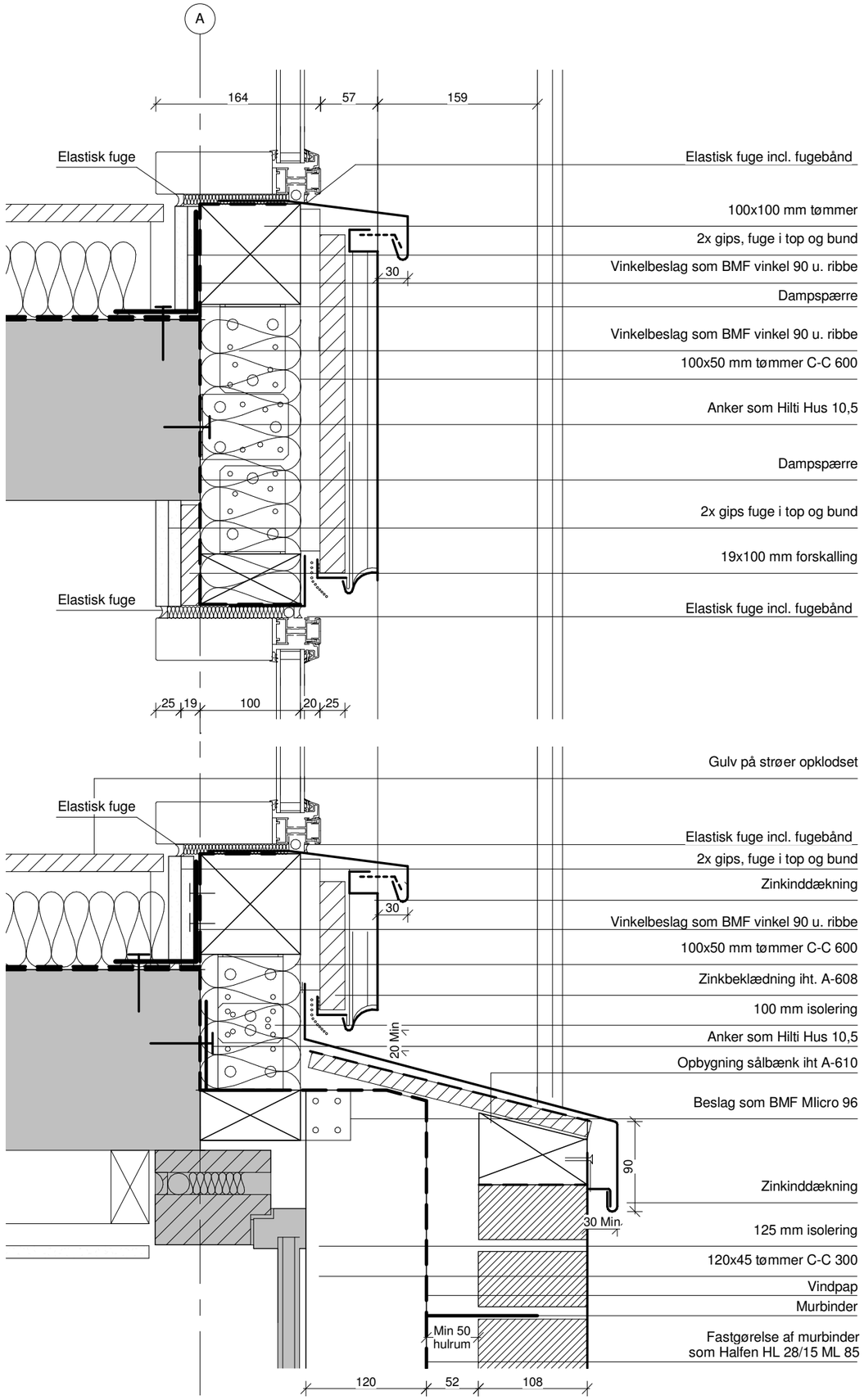
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Vindue/letfacade

NR A-612



REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1 : 5

KOLSTRUP

BOLIGFORENING AFD. 16

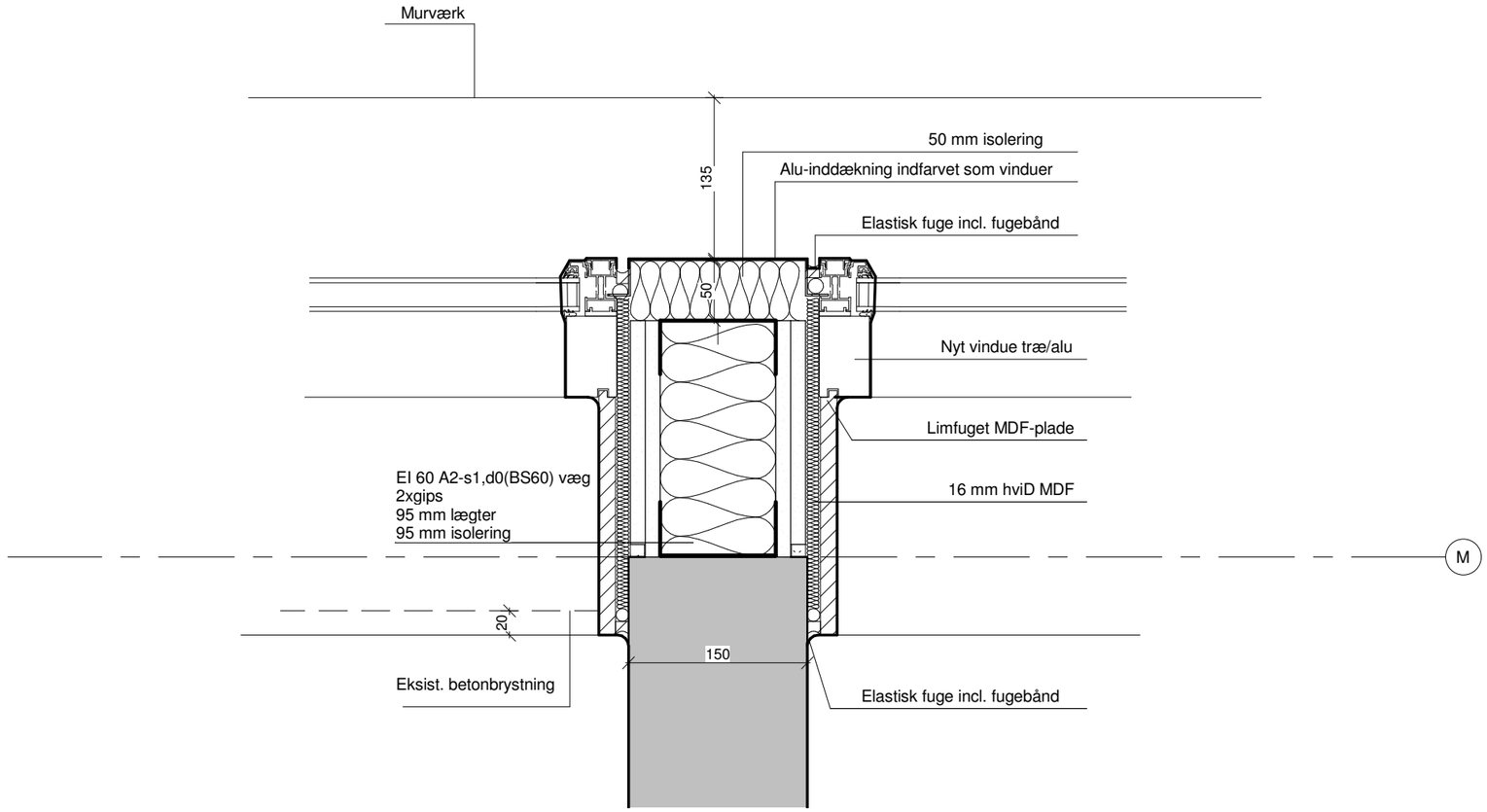
N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16

● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Glasparti/facade

NR A-613



REV	DATO	TEGN	KS	SAG 07.334	MÅL	1 : 5
	09.02.09	SL	ALL/AD			

KOLSTRUP

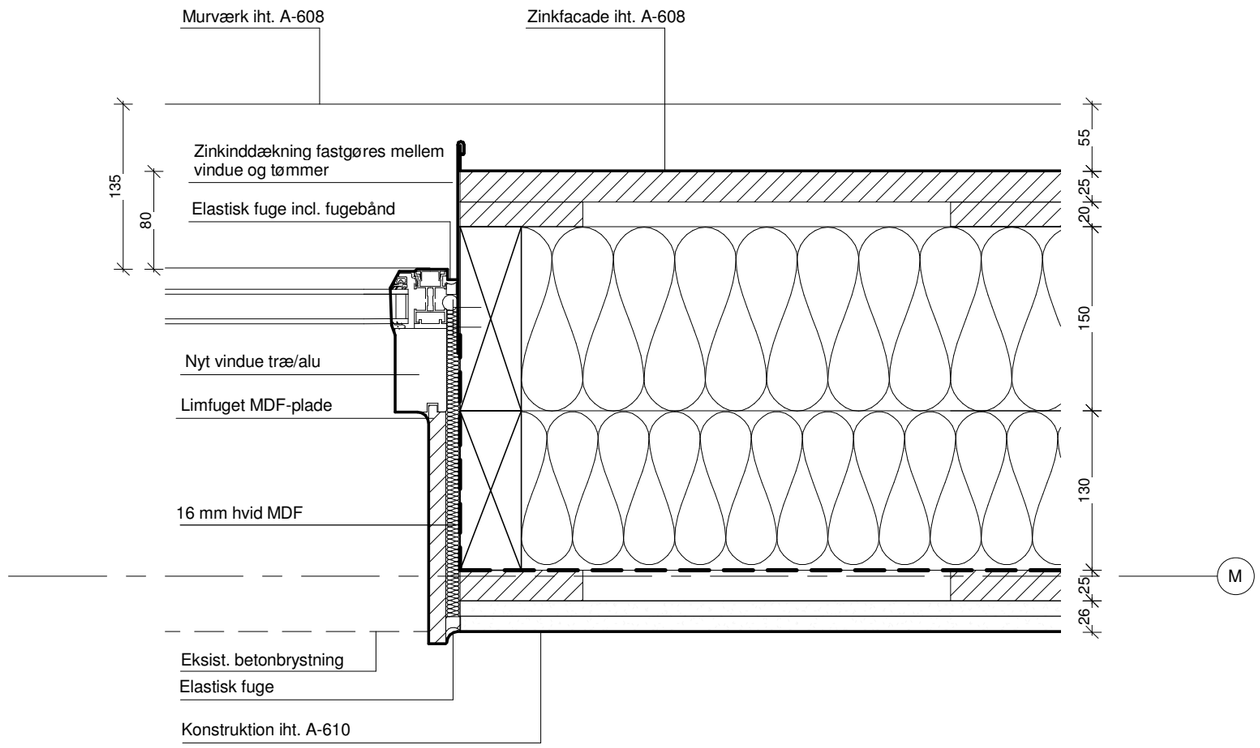
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Vandret snit - Lejlighedsskel/vindue

NR A-614



REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1 : 5

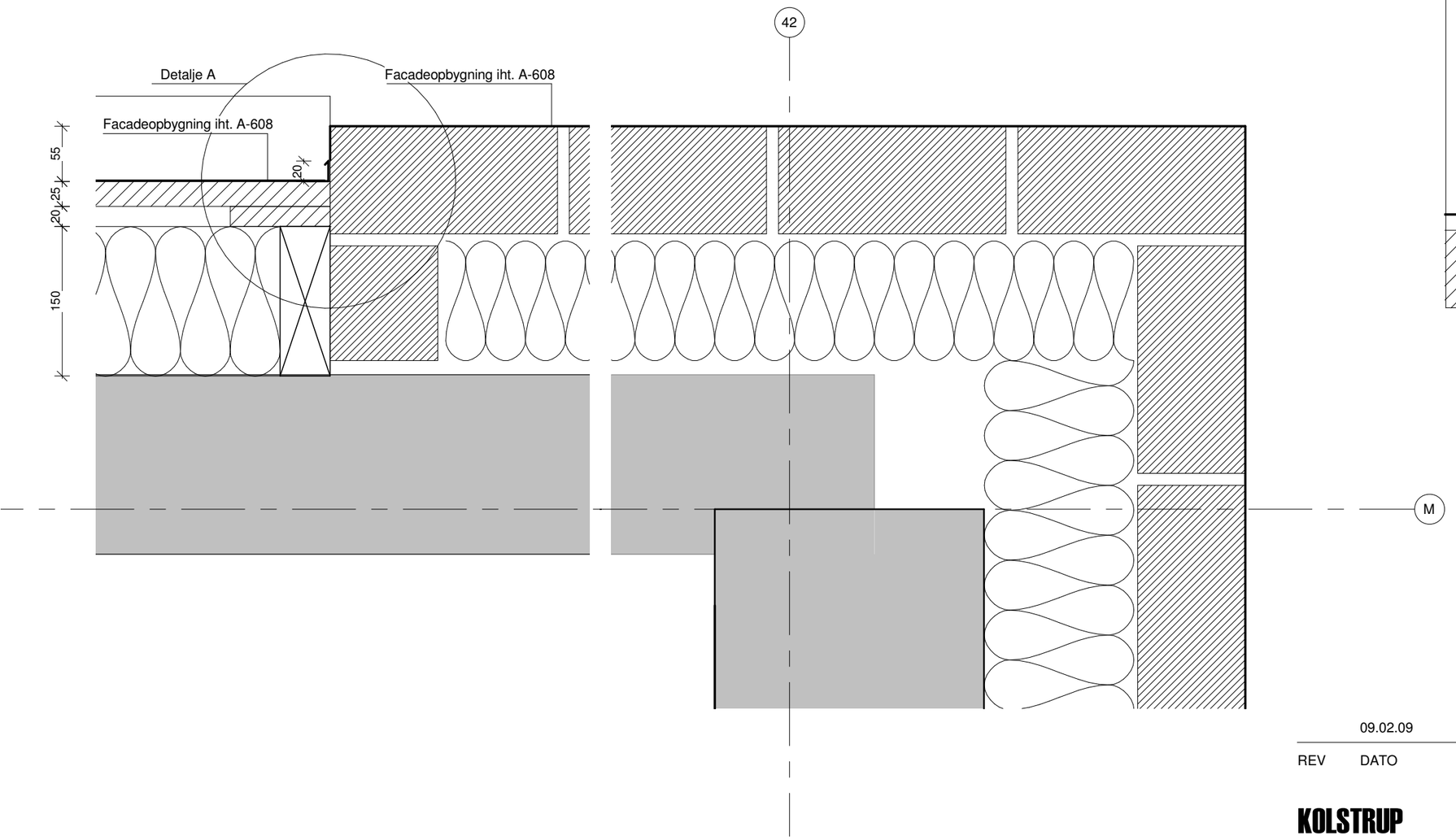
KOLSTRUP

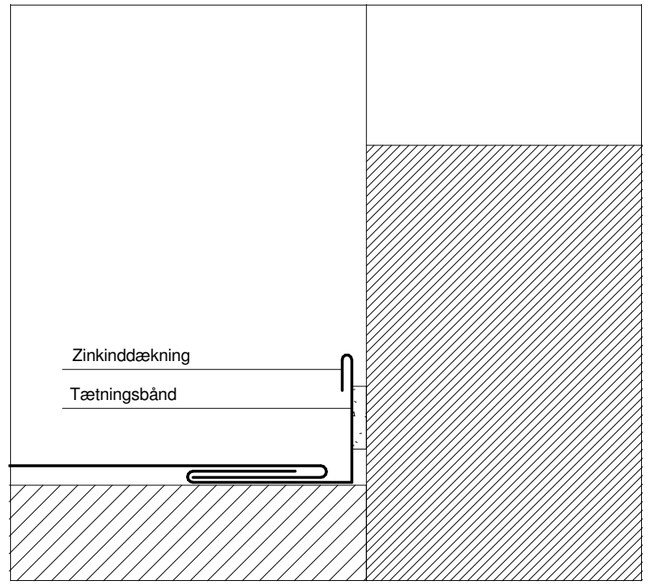
BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Vandret snit - Vindue/zinkfacade

NR A-615





Detalje A 1:1

	09.02.09	SL	ALL/AD			
REV	DATO	TEGN	KS	SAG 07.334	MÅL	As indicated

KOLSTRUP

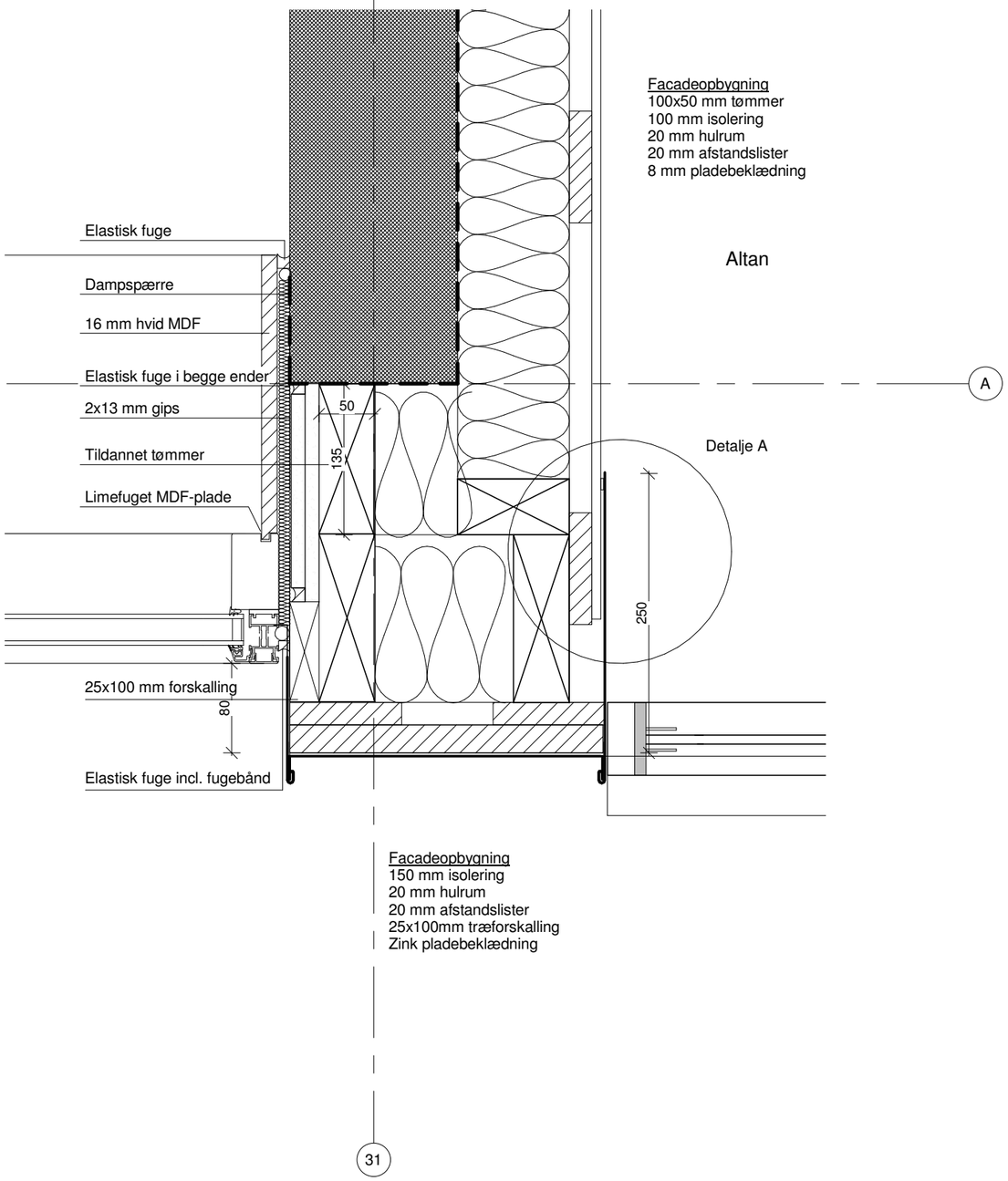
BOLIGFORENING AFD. 16

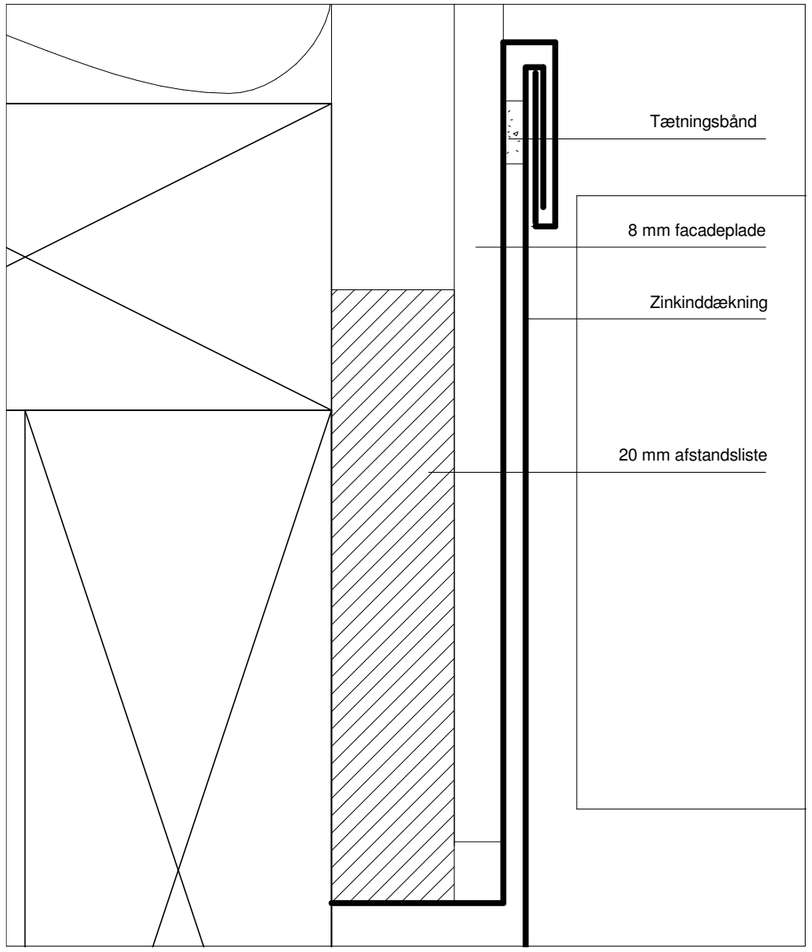
N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Vandret snit - Tung-/letfacade

NR A-616





Detalje A 1:1

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		As indicated

KOLSTRUP

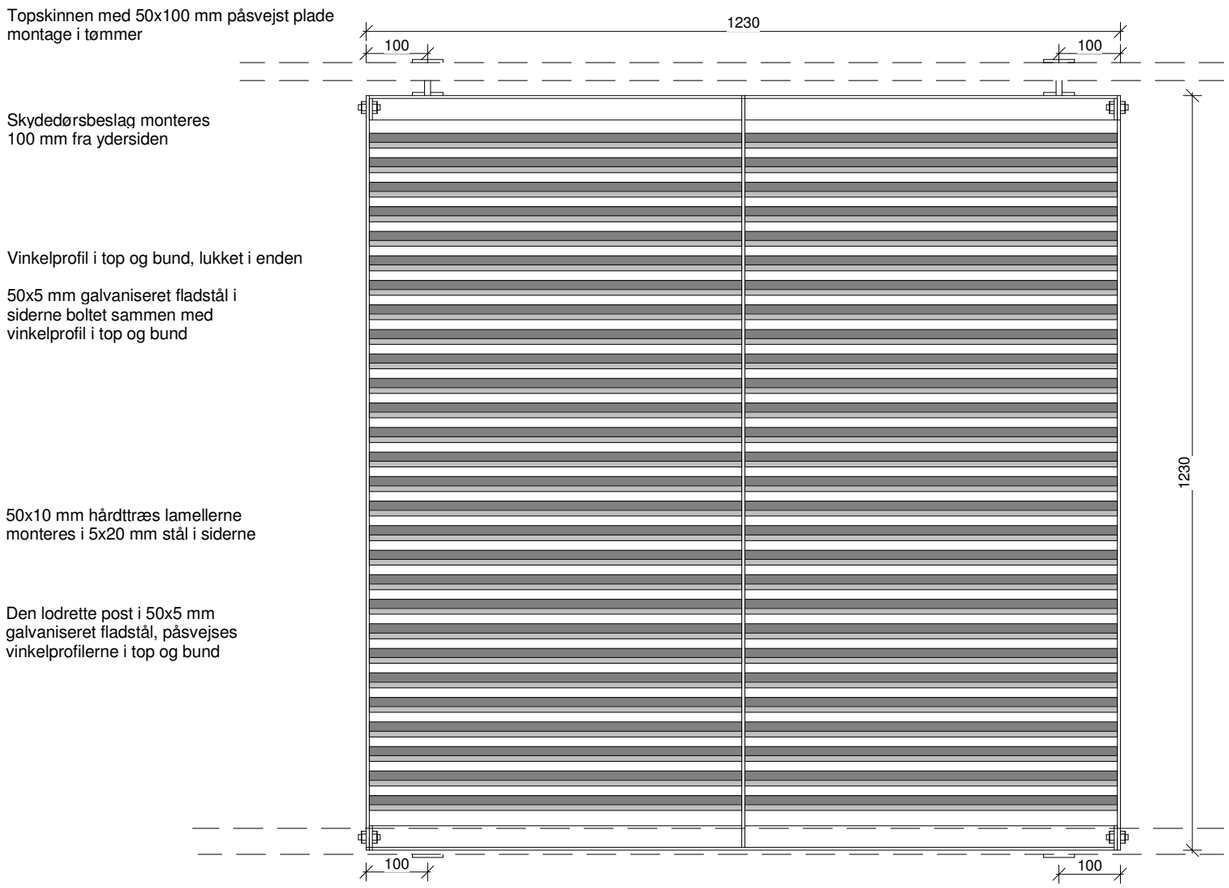
BOLIGFORENING AFD. 16

N5VA

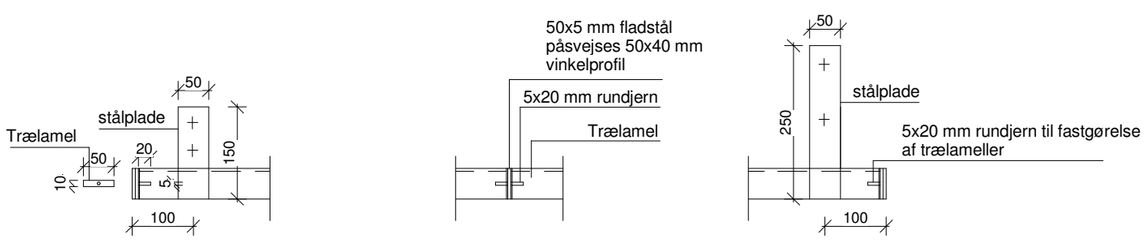
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Vandret snit - Altan/ydervæg

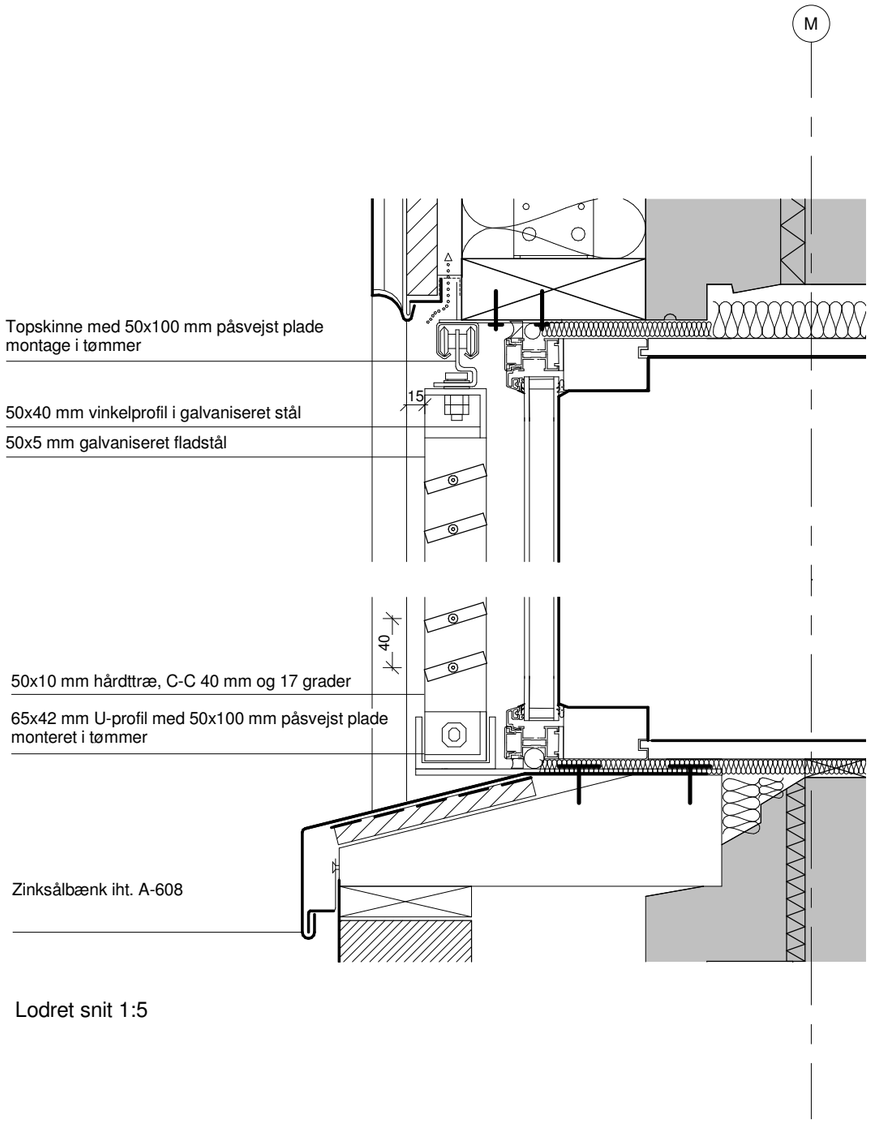
NR A-617



Opstalt 1:10



Plan1:10



Lodret snit 1:5

REV	DATO	TEGN	KS	SAG 07.334	MÅL	As indicated
	09/02/09	SL	ALL/AD			

KOLSTRUP

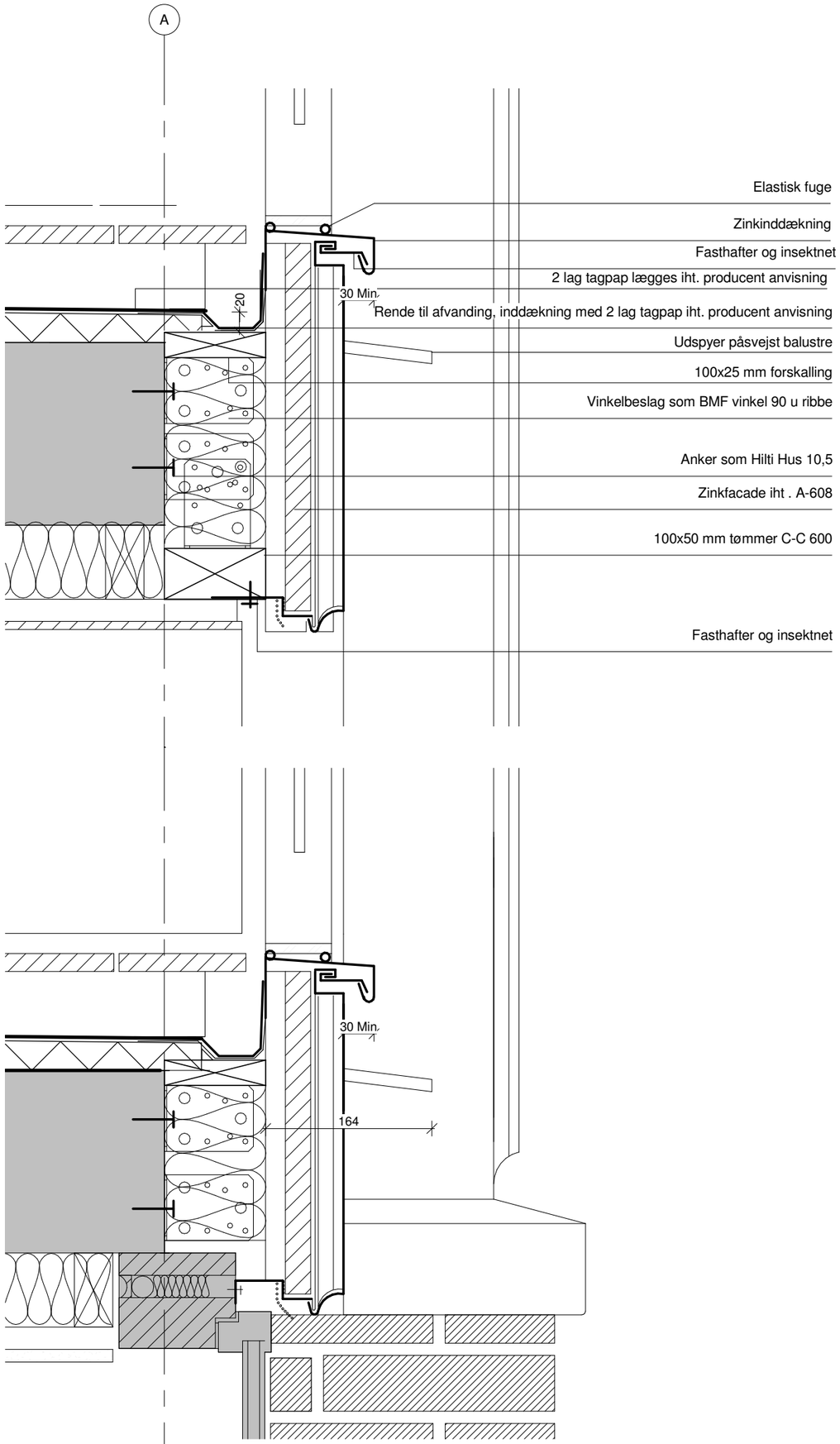
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

plan/snit/opstalt - vindue/skodder

NR A-618



NR. **A-619**

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5
	09/02/09	SL	ALL/AD		

KOLSTRUP

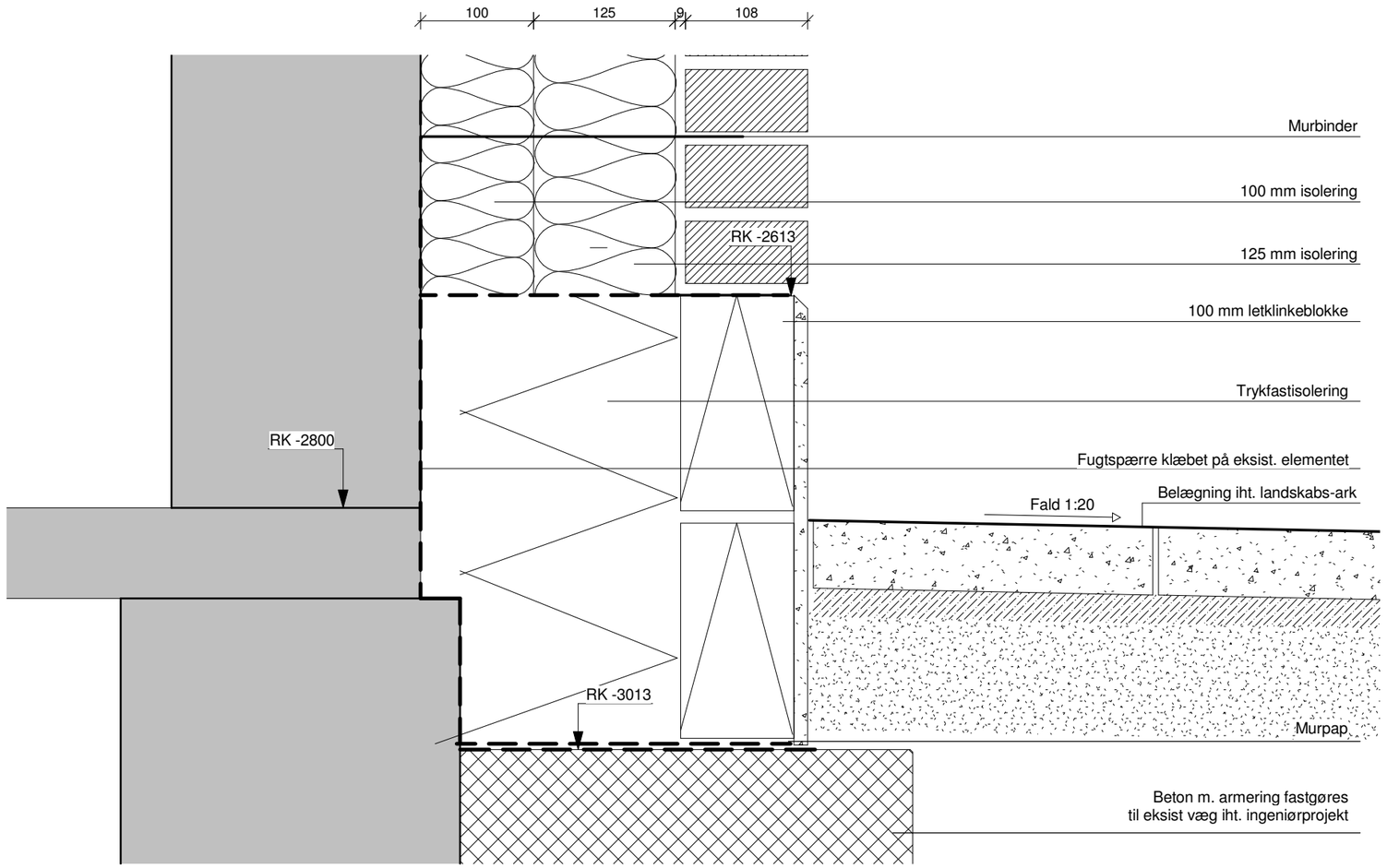
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Altan/zinkfacade

NR **A-619**



Note

Variabel letklinkeblok opbygning se tegn nr. A-211 og A-602
Dræn iht. landskabs-ark.

REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5
	09.02.09	SL	ALL		

KOLSTRUP

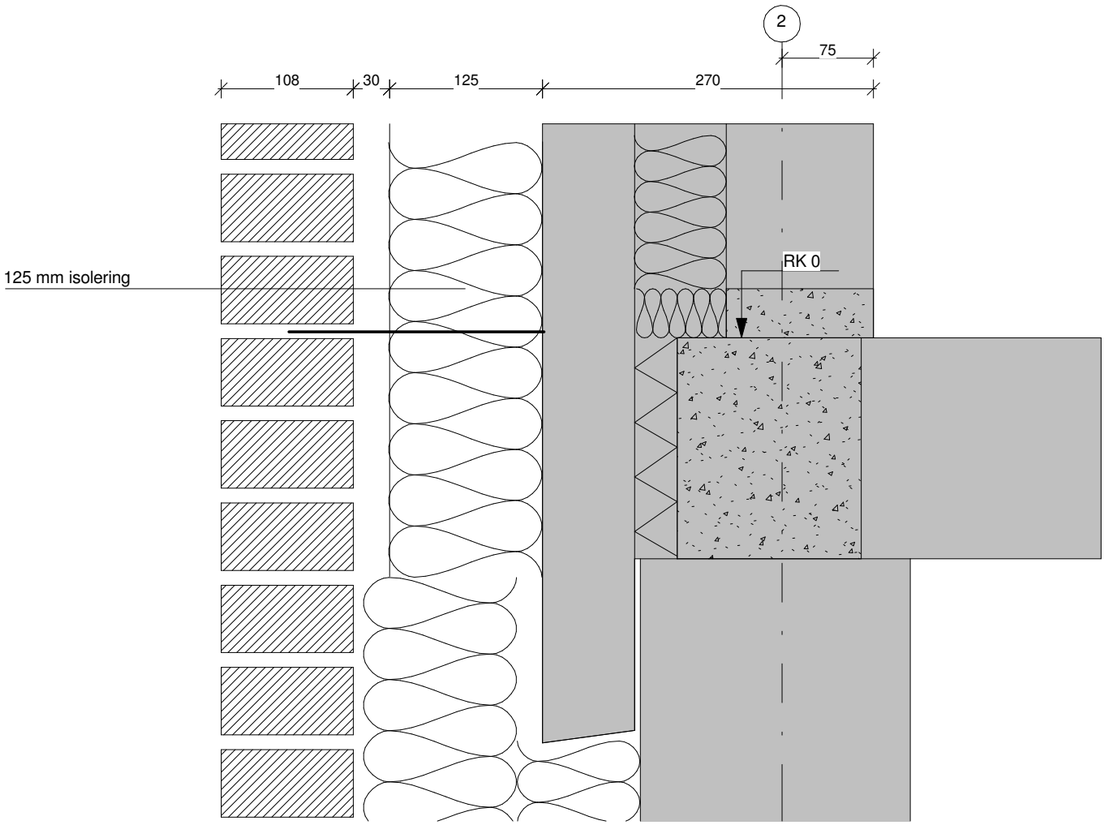
BOLIGFORENING AFD. 16

NOVA5

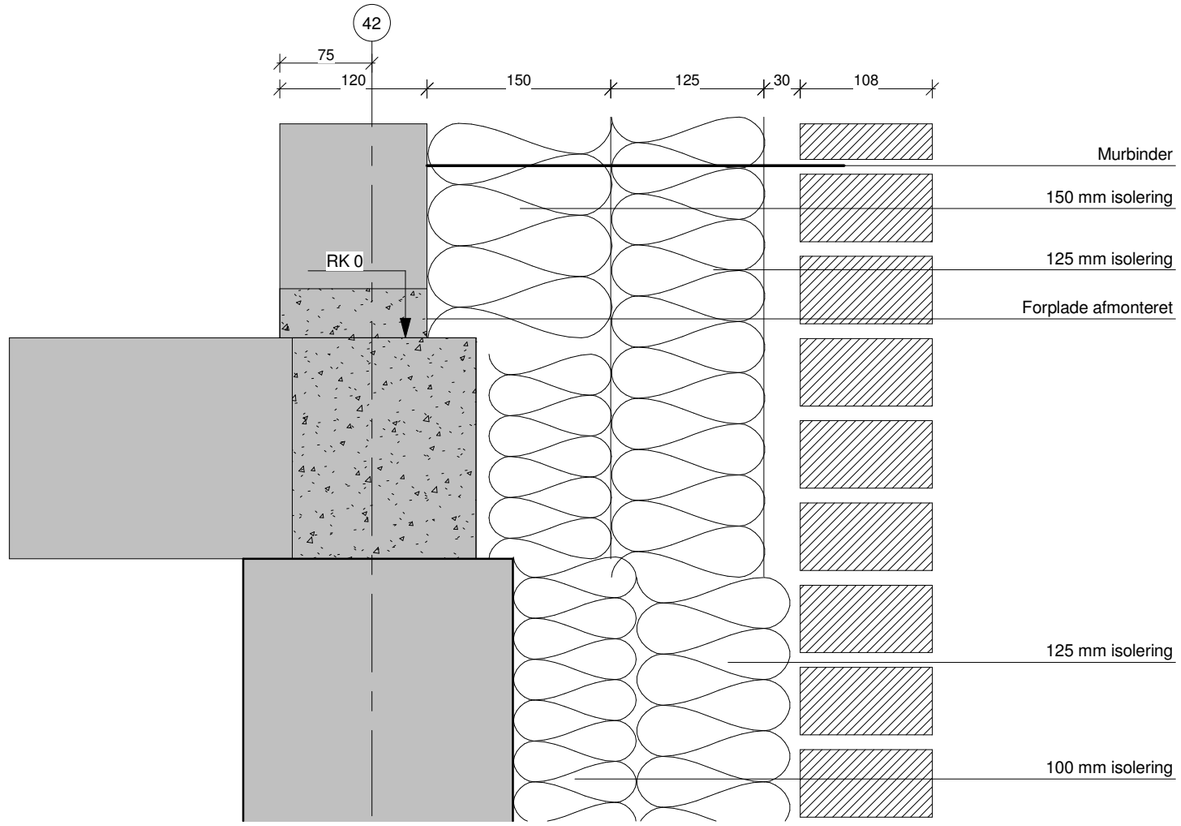
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Sokkel/gavl

NR A-620



Detalje A. med forplade



Detalje B. uden forplade

	09.02.09	SL	ALL		
REV	DATO	TEGN	KS	SAG 07.334	MÅL 1 : 5

KOLSTRUP

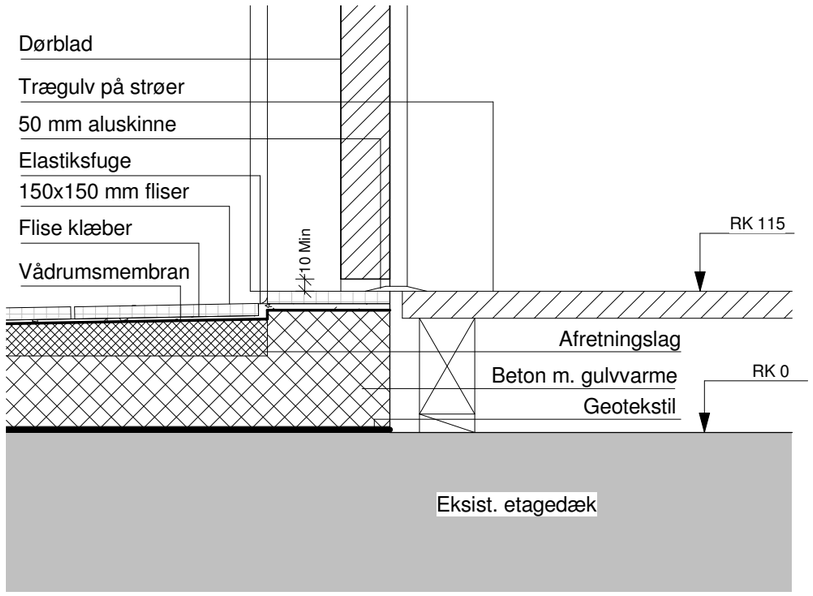
BOLIGFORENING AFD. 16

NOVA5

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Forplade/gavl

NR A-621



REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL		1 : 5

KOLSTRUP

BOLIGFORENING AFD. 16

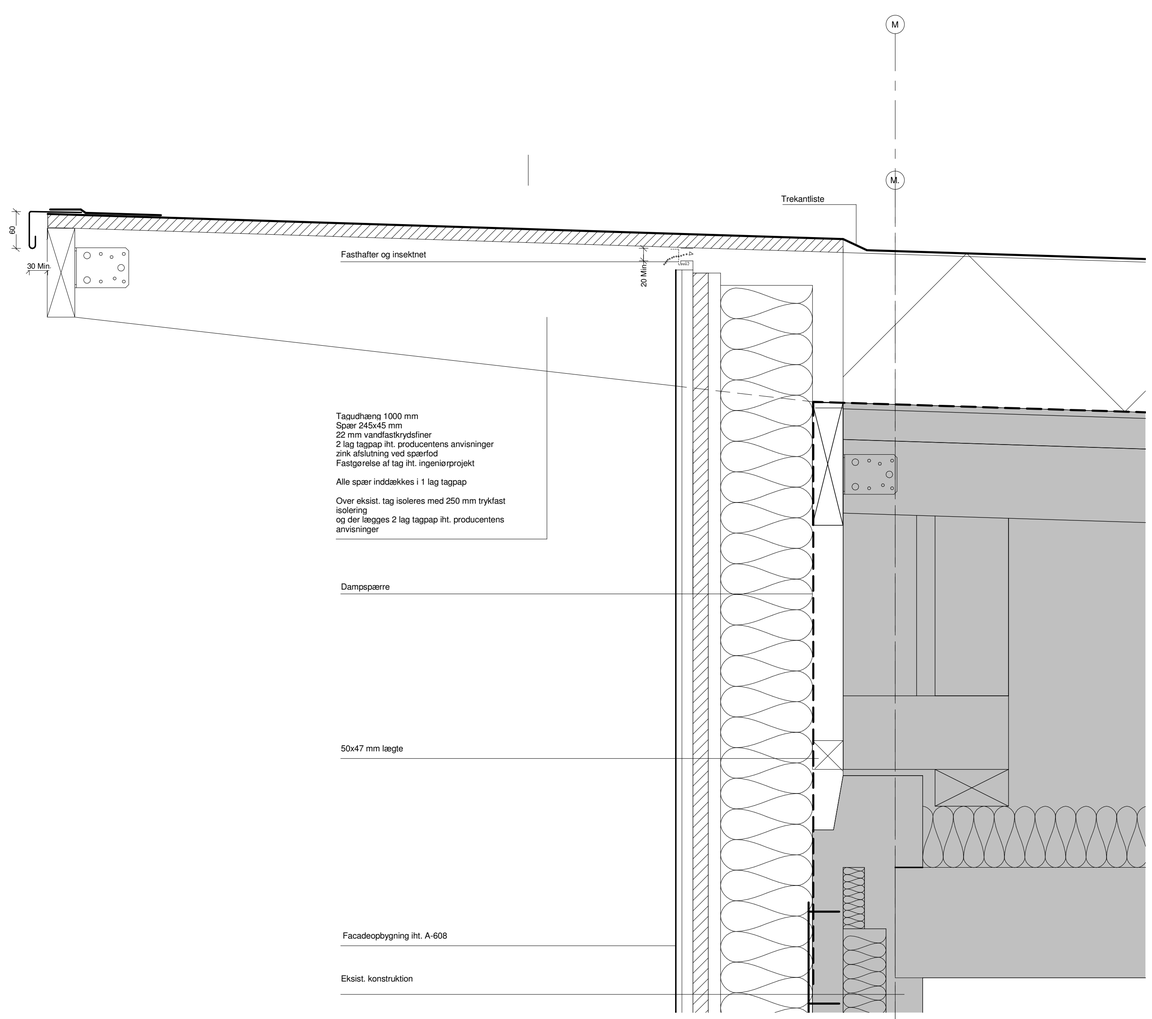
NOVA5

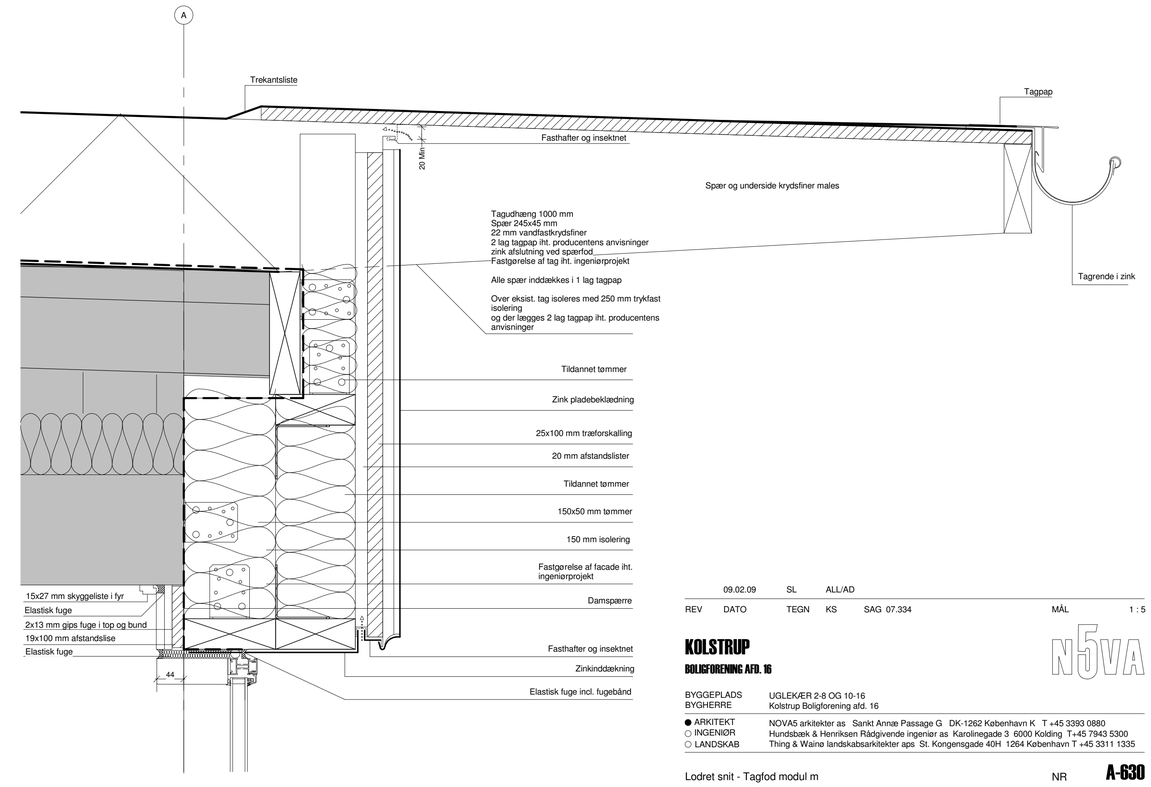
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Princip

Lodret snit - Overgang gulv til badeværelse

NR **A-622**





NR. **A-630**

REV	DATO	TEGN	KS	SAG 07.334	MÅL
	09.02.09	SL	ALL/AD		1 : 5

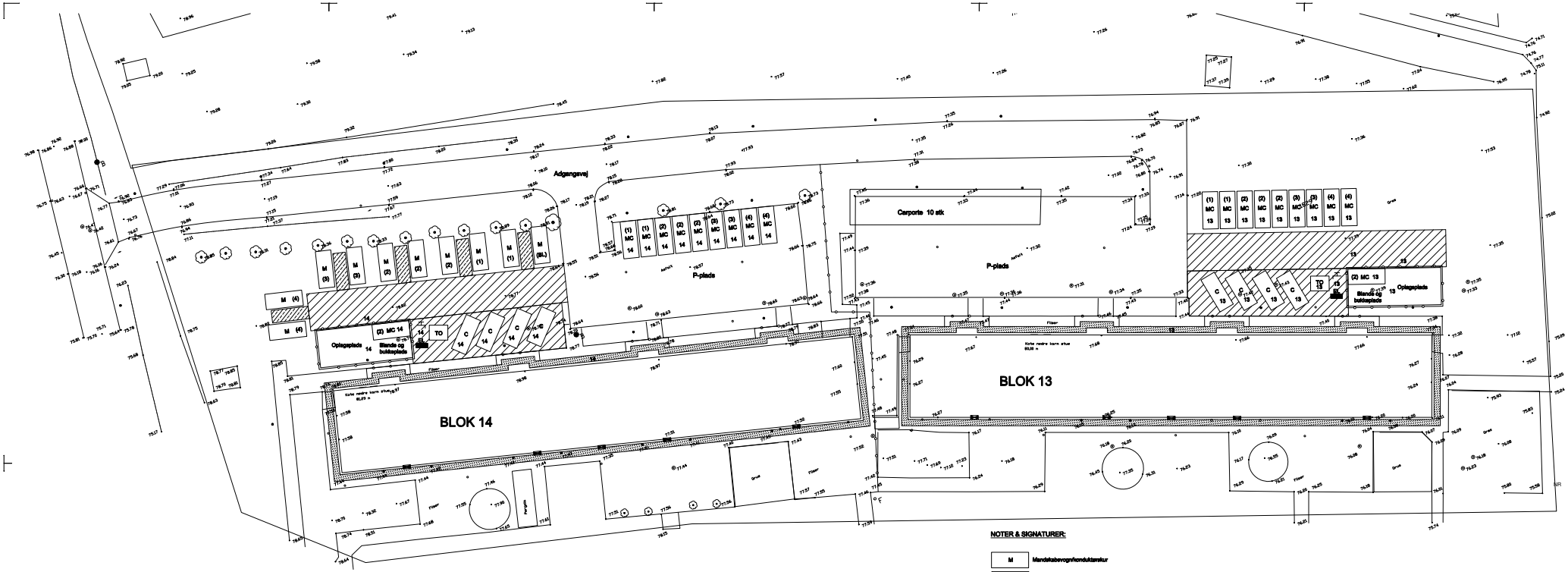
KOLSTRUP

BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	Kolstrup Boligforening afd. 16
● ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
○ INGENIØR	Hundsbæk & Henriksen Rådgivende ingeniør as Karolinegade 3 6000 Kolding T+45 7943 5300
○ LANDSKAB	Thing & Waina landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Lodret snit - Tagfod modul m

NR **A-630**



NOTER & SIGNATURER:

M	Mandskabsvogn/konduktørskur
MC	Materielcontainer
C	Dispositel containerplads
TO	Toiletvogn
N	Nødhjælpscontainer med brand- og redningsmateriel, forbindingskasse, ejendsliyt og nødtelefon
	Byggepladsvej: Befæstiges med fiberdug + 200 mm stabilt grus.
	Gangarealer: Opbygges af 98x98 mm tømmer beklædt med 25 mm bræder, alternativt befæstiges med fiberdug + 200 mm stabilt grus.
	Stillads - stilladsklasse 4
	Hegn
Oplagsplads	Befæstigelse: Fiberdug + 200 mm stabilt grus
13 / 14	Angiver at emnet etableres i forbindelse med opstarten på blok 13/14 og afrigges i forbindelse med afleveringen af blok 13/14. Emner uden nr. skal være i drift i hele byggeperioden
(X)	Entreprise
	Vandpost
EL	El-tavle
	Byggepladsbelysning: Placeres stillads et adgangsvejs, transportvejs og færdsels-arealer har min. 25 lux og i øvrigt efter aftale med byggeledelse.

Eksisterende træer der ikke skal fjernes skal beskyttes. Se tegn L 101 Kote- og betegningsplan.

KCXJ1-010

REV	DATO	TEGN	KS	SAG 07.877.1	MÅL 1:250
	09.02.2009	AJS	MIP		

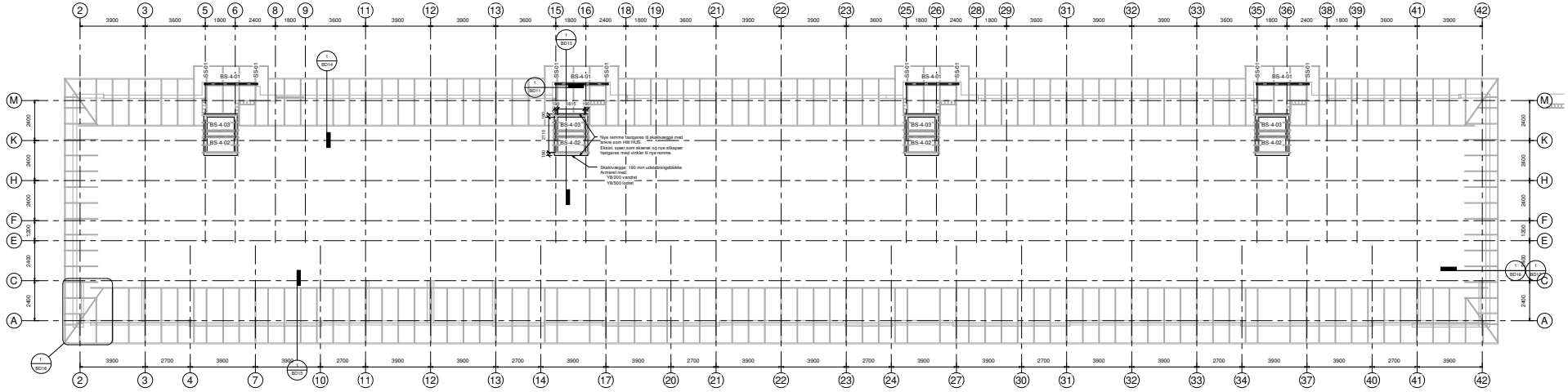
KOLSTRUP
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS UGLEKÆR 2-8 10-16
BYGHERRE SALUS BOLIGADMINISTRATION

ARKITEKT NCVA5 arkitekter aa. Sankt Annæ Passage G. DK-1262 København K T +45 3393 0880
INGENIØR Hundebæk & Henriksen Rådgivende ingeniør as. Kanalvejen 3 6000 Kolding T +45 7940 5300
LANDSKAB Thing & Weine landskabsarkitekter aps. St. Kongensgade 40H 1264 København K T +45 3311 1335

Byggepladsplan NR KCXJ1-010



NOTE / SIGNATURER:
Alle mål er i mm. Kotar er i m. og relative.
Detaljer, se tegn. nr. K(XI)5-410
Kun bærende og stabiliserende elementer er angivet.
Målsætning i øksist. bygning er vejledende. Endelige mål skal tages på stedet.

NR. KX)1-242

Betonkonstruktioner:
Se betonnote tegn. nr. K(XI)5-415

Stålkonstruktioner:
RHS profiler S355JRG0
Øvrige profiler S235JR02

Brandbeskyttelse:
Generel brandbeskyttes stål til R60 A2-s1,d0 (BS60)
1: Inddækkes med 2x15 mm gips iht. arkitekt.
2: Inddækkes i let gipskonstruktion iht. arkitekt.
3: Omstøbes med min. 25 mm beton, armeret med 1,4 kg strækmetal pr. m2.
4: Brandmales - farve iht. arkitekt.
5: Brandbeskyttes ikke.

Korrosionsbeskyttelse:
Udvendigt: korrosionsklasse C4 ved varmforzinkning
I murværk: korrosionsklasse C4 ved varmforzinkning
Indvendigt: korrosionsklasse C2 ved maling

Stålaelter:

		Brandbeskyttelse:
SS-01	IPE200	2

Stålbjaelker:

		Brandbeskyttelse:	Bemærkning:
BS-4-01	IPE200	2	
BS-4-02	IPE120	2	Med demonterbar M12 sikkerhedsøjebolt til elevatormontage
BS-4-03	IPE80	2	Med demonterbar M12 sikkerhedsøjebolt til elevatormontage

Tag:

Kvalitet K18

REV	DATO	TEGN	KS	SAG 07.877.1	MÅL
	09.02.2009	AJS	MIP		1 : 100

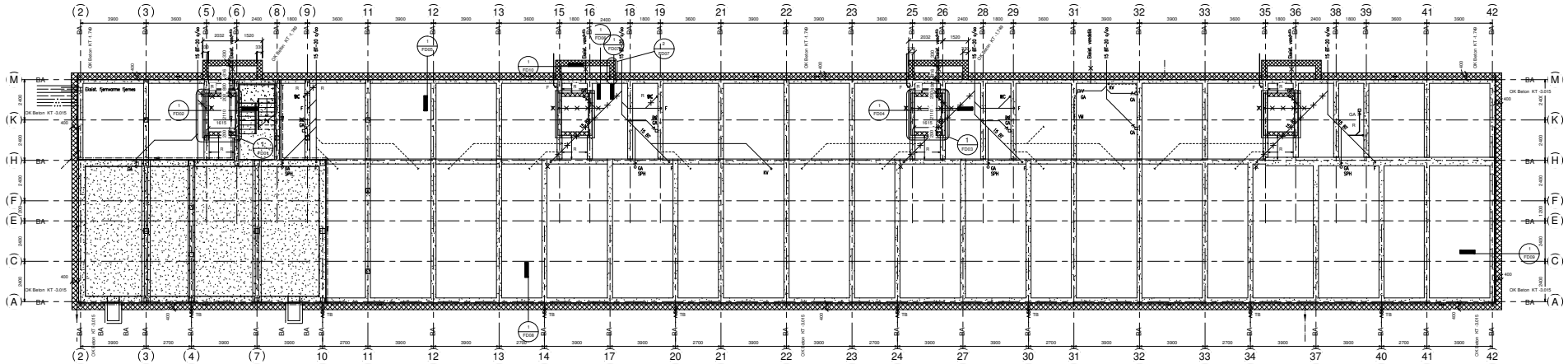
KOLSTRUP
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	KOLSTRUP BOLIGFORENING AFD. 16
ARKITEKT	NOVAS arkitekter as Sankt Annæ Passagage G DK-1262 København K T +45 3393 0880
INGENIØR	Hundstæk & Henriksen as Rådgivende ingeniører Kanalvejgade 3 6000 Kolding T +45 7343 5300
LANDSKAB	Thing & Wæne landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Blok 13 og 14
Tagplan

NR KX)1-242



NOTE OG SIGNATURER:

Alle mål i mm. Koter er i m. og relative.
Se generel betonnote K(X)5-415
Detaljer se tegn. nr. K(X)5-410

Kun udvalgte eksist. pæle er angivet.

R / T	Reparation af eksist. betongulv
BA	Bejlearmering indlimet i eksist. fundamenter/vægge, se tegn. FD05, FD08 og FD09.
	Ny betonkonstruktion
	Eksist. spildevand
	Eksist. spildevand (muligvis ikke udført eller afproppet)
	Eksist. regnvand
	Eksist. dræn
F	Eksist. faldstamme
GV	Eksist. gulvafløb
GV	Eksist. gulvafløb
	Eksist. tagnedløb med nedløbsbrønd - slettes / flyttes
	Eksist. ledning som slettes / afproppes
	Eksist. vandstik
	Eksist. fjernvarmestik
	Ny spildevandsledning (ubenævnte ledninger er ø110 PVC)
	Ny regnvandsledning (ubenævnte ledninger er ø110 PVC)
	Ny omfangsdræn
	Nyt vandstik
	Nyt fjernvarmestik
F	Faldstamme
GA	Gulvafløb
HV	Håndvask
KV	Køkkenvask
RV	Rengøringsvask
SPH	Spulehane
VM	Vaskemaskine
WC	WC-stol
TB	Tagbrønd, standard ø315 PVC med vandlås, sandfang og betondæksel. Tilsluttes eksist. ledning

NR **K(13)1-200**

REV	DATO	TEGN	KS	SAG 07.877.1	MÅL
	09.02.2009	AJS	MIP		1:100

KOLSTRUP
BOLIGFORENING AFD. 16

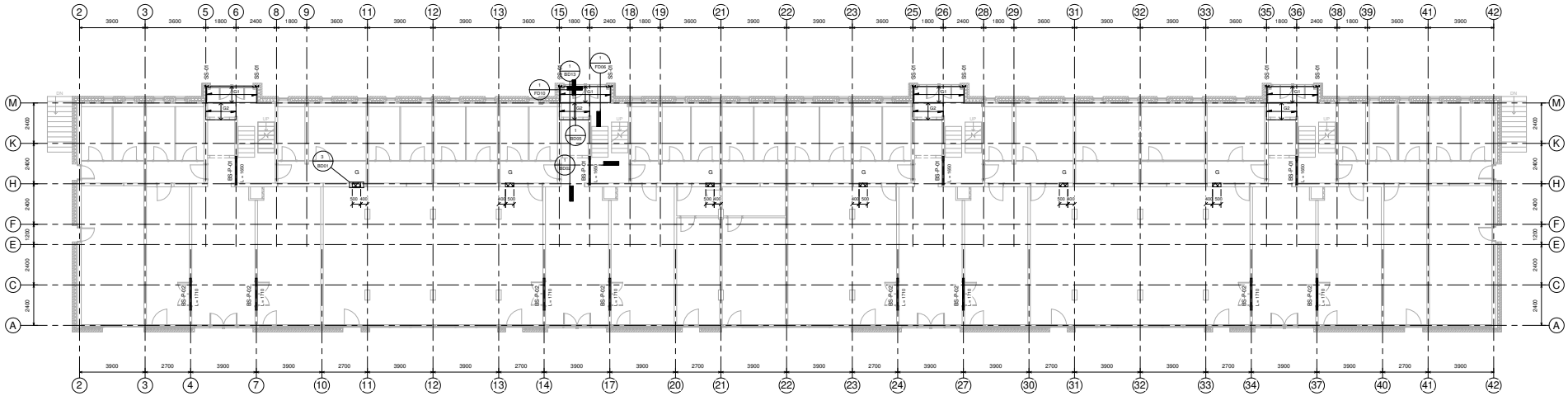
N5VA

BYGGEPLADS UGLEKÆR 2-8 10-16
BYGHERRE SALUS BOLIGADMINISTRATION

ARKITEKT	NOVA5 arkitekter aa	Sankt Annæ Passage G DK-1262 København K T +45 3393 0880
INGENIØR	Hundebæk & Henriksen as	Rådgivende Ingeniør Kanchegade 3 8000 Kolding T +45 7343 5300
LANDSKAB	Thing & Weine landskabsarkitekter aps	St. Kongensgade 40H 1264 København K T +45 3311 1335

Blok 13 - Plan
Fundamenter, kloak og stikledninger

NR **K(13)1-200**



NOTE / SIGNATURER:

NR. K(33)1-240

Alle mål er i mm. Koter er i m, og relative.
Detaljer, se tegn. nr. K(X)5-410
Kun bærende og stabiliserende elementer er angivet.
Målsætning i øksist. bygning er vejledende. Endelige mål skal tages på stedet.

Betonkonstruktioner:
Se betonnote tegn. nr. K(X)5-415

Stålkonstruktioner:
RHS profiler S355J2H\PR02
Øvrige profiler S235J\PR02

Brandbeskyttelse:
Generel brandbeskyttes stål til R60 A2-s1,d0 (BS60)
1: Inddækkes med 2x15 mm gips iht. arkitekt.
2: Inddækkes i let gipskonstruktion iht. arkitekt.
3: Omstøbes med min. 25 mm beton, armeret med 1,4 kg strækmetal pr. m2.

Korrosionsbeskyttelse:
Udvendigt: korrosionsklasse C4 ved varmforzinkning
I murværk: korrosionsklasse C4 ved varmforzinkning
Indvendigt: korrosionsklasse C2 ved maling

Stålsøjler:

		Brandbeskyttelse:
SS-01	IPE200	2

Stålbjælker:

		Brandbeskyttelse.
BS-P-01	HE100B	3
BS-P-02	IPE200	3

Signaturer:

G Angiver glidningssikring som vist på detalje BD01.

G1 100 mm insitu-støbt terrændæk, armeret med Y8/150 i BR. US.
200 mm isolering som sundolitt S60 eller tilsvarende

G2 100 mm insitu-støbt dæk, armeret med Y8/150 i BR. US.
Udstøbes på bilvende forskalling

REV	DATO	TEGN	KS	SAG 07.877.1	MÅL
	09.02.2009	AJS	MIP		1 : 100

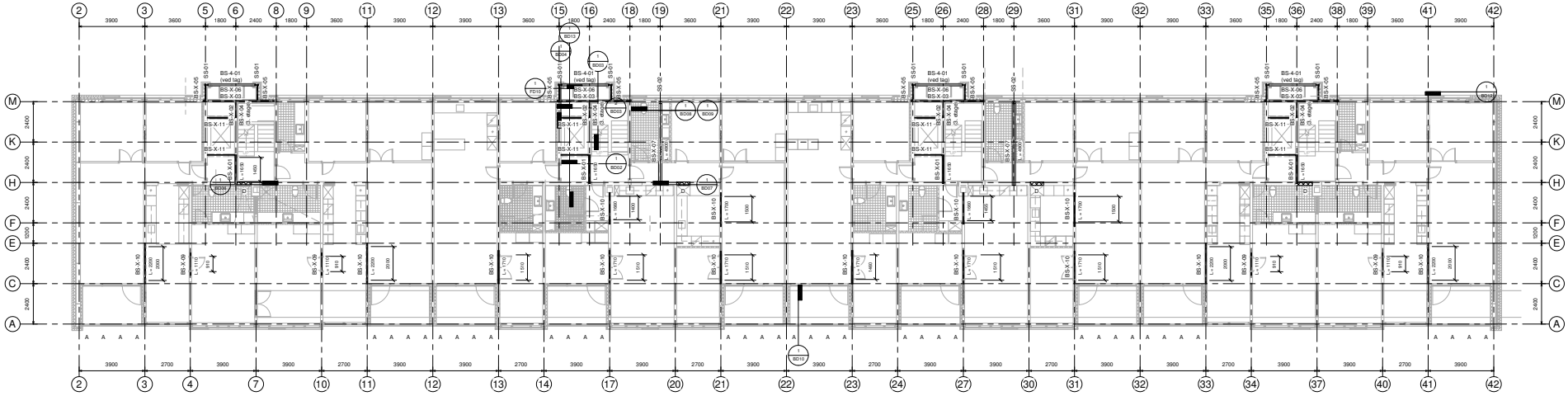
KOLSTRUP
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEBÆKER 2-8 OG 10-16
BYGHERRE	KOLSTRUP BOLIGFORENING AFD. 16
ARKITEKT	NOVAS arkitekter as Sankt Annæ Passagage G DK-1262 København K T +45 3393 0880
INGENIØR	Hundstrøm & Henriksen as Rådgivende Ingeniører Kanslinegade 3 9300 Kolding T +45 7940 5300
LANDSKAB	Thing & Wæine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Blok 13
Konstruktionsplan Parterre

NR K(33)1-240



NOTE / SIGNATURER: NR. K(13)1-241

Alle mål er i mm. Kotar er i m. og relative.
Detaljer, se tegn. nr. K(X)5-410
Kun bærende og stabiliserende elementer er angivet.
Målsætning i akslst. bygning er vejledende. Endelige mål skal tages på stedet.

Betonkonstruktioner:
Se betonnote tegn. nr. K(X)5-415

Stålkonstruktioner:
RHS profiler S355J0H2
Øvrige profiler S235JR2

Brandbeskyttelse:
Generel brandbeskyttes stål til R60 A2-s1,d0 (BS60)
1: Inddækkes med 2x15 mm gips iht. arkitekt.
2: Inddækkes i let gipskonstruktion iht. arkitekt.
3: Omstøbes med min. 25 mm beton, armeret med 1,4 kg strækmetal pr. m2.
4: Brandmales - farve iht. arkitekt.
5: Brandbeskyttes ikke.

Korrosionsbeskyttelse:
Udvendigt: korrosionsklasse C4 ved varmforzinkning
I murværk: korrosionsklasse C4 ved varmforzinkning
Indvendigt: korrosionsklasse C2 ved maling

Stålsøjler:

		Brandbeskyttelse:
SS-01	IPE200	2
SS-02	HE120B	3

Stålbjælker:

		Brandbeskyttelse:	Bemærkning:
BS-X-01	HE100B	1	
BS-X-02	IPE120	1	
BS-X-03	IPE200	1	
BS-X-04	HE120B	1	
BS-X-05	RHS80x40x4	2	
BS-X-06	Fladestål 100x10	5	Placeres i fuge i glaspartí
BS-X-07	HE200B	1	
BS-X-09	IPE100	3	
BS-X-10	IPE140	3	
BS-X-11	RHS80x40x4	5	Fastgøres til betonvægge med 2x2 M12 limankre

Signaturer:

D Angiver udstøbning af dørhuller som vist på detalje BD06 og BD07.
A Angiver altan-balustre som vist på detalje DB10.

REV	DATO	TEGN	KS	SAG 07.877.1	MÅL
	09.02.2009	AJS	MIP		1 : 100

KOLSTRUP
BOLIGFORENING AFD. 16

N5VA

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	KOLSTRUP BOLIGFORENING AFD. 16
ARKITEKT	NOVAS arkitekter as Sankt Annæ Passagage G DK-1262 København K T +45 3393 0880
INGENIØR	Hundstrøk & Henriksen as Rådgivende ingeniører Kanonbegade 3 8000 Aalborg T +45 7643 5300
LANDSKAB	Thing & Wæine landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Blok 13
Konstruktionsplan 1.-3. etage

NR K(13)1-241

NOTE:

Generelt:

Hvor der er angivet specifikke produkter og typer med hensyn til ankre og beslag gælder, at der anvendes produkter som anført eller tilsvarende - såfremt der anvendes andre produkter end angivet kan laster rekvireres ved ingeniør.

For øvrige noter henvises til beskrivelser og plantegninger K(13)1-200, -240, -241 + K(14)1-200, -240, -241 + K(X)1-242 + K(X)5-415

	09.02.2009	AJS	MIP		
REV	DATO	TEGN	KS	SAG 07.877.1	MÅL

KOLSTRUP

BOLIGFORENING AFD. 16

N5VA

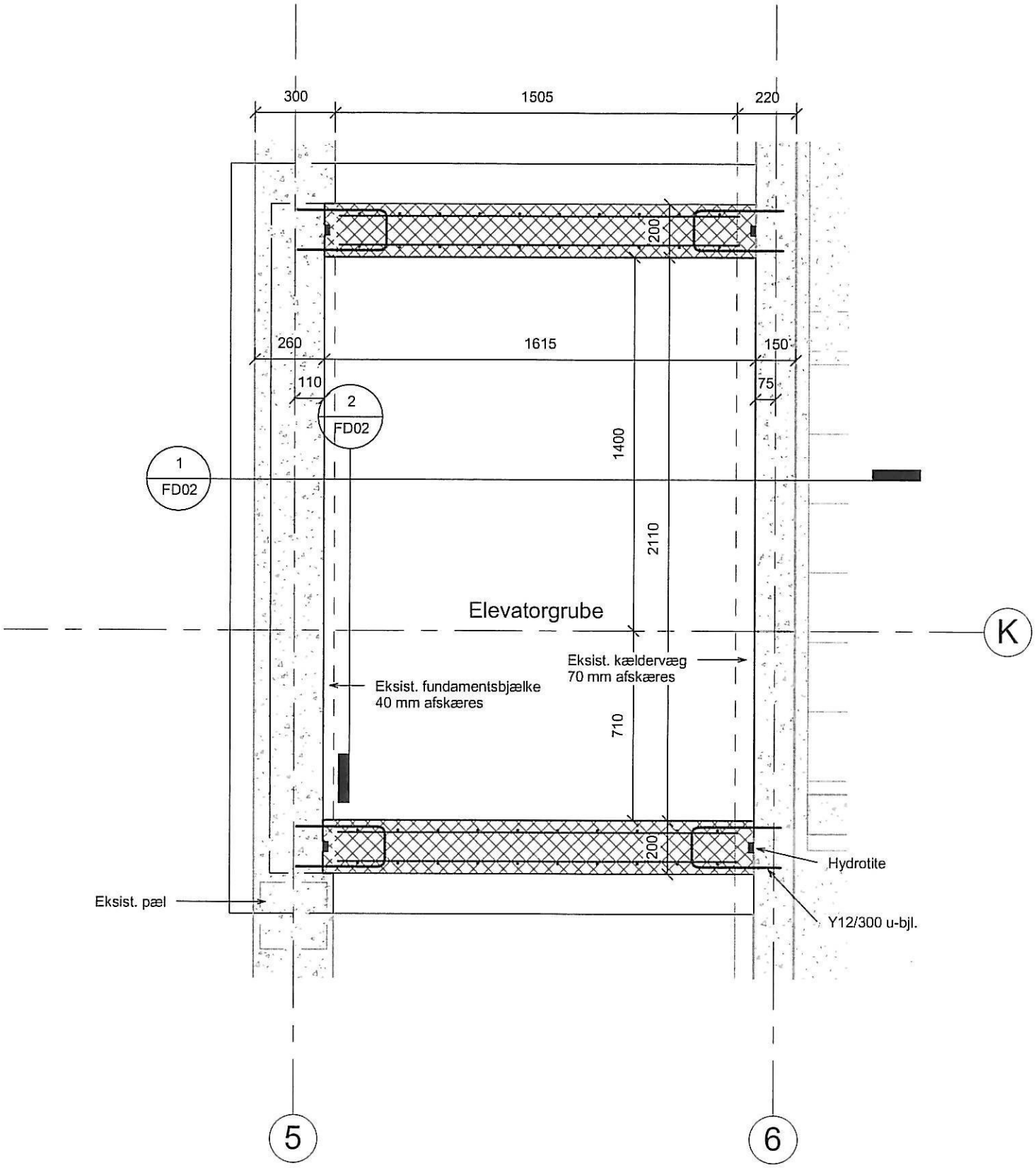
BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	KOLSTRUP BOLIGFORENING AFD. 16

○ ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passagage G DK-1262 København K T +45 3393 0880
● INGENIØR	Hundsbæk & Henriksen as Rådgivende ingeniører Karolinegade 3 6000 Kolding T +45 7943 5300
○ LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

Blok 13 og 14
Fundaments- og bygningsdetaljer

Tegningsliste_Fundamentsdetaljer			
Sheet Number	rev	rev. dato	Detaljer_indeholder
FD01			Plan af elevatorgrube ved kælder
FD02			Snit i elevatorgrube ved kælder
FD03			Plan af elevatorgrube
FD04			Snit i elevatorgrube
FD05			Princip for påstøbt konsol på eksist. betonkonstruktion - Facade mod nord
FD06			Fundament / terrændæk ved indgang
FD07			Ophængning af fundament ved indgang
FD08			Princip for påstøbt konsol på eksist. betonkonstruktion - Facade mod syd
FD09			Princip for påstøbt konsol på eksist. betonkonstruktion - Gavle mod nord og syd
FD10			Søjle ved indgang

Tegningsliste_Bygningsdetaljer			
Sheet Number	rev	rev. dato	Detaljer_indeholder
BD01			Glideforankring af vægge i Parterre
BD02			Stålbjælke i trapperum - ved repos og eksist. dæk
BD03			Stålbjælke i trapperum - ved repos
BD04			Stålbjælker i trapperum - ved indgang
BD05			Skaktvæg og dæk ved indgang - parterre
BD06			Betonudstøbning i eksist. dørhul
BD07			Betonudstøbning i eksist. dørhul
BD08			Ophængning af eksist. brystning ved søjle
BD09			Ophængning af eksist. brystning ved søjle
BD10			Fastgørelse af værn ved altaner
BD11			Topbjælke ved indgang
BD12			Princip for opbygning og fastgørelse af let facadekonstruktion
BD13			Princip-opstalt af stål i trapperum
BD14			Tagudhæng ved modul M
BD15			Tagudhæng ved modul A
BD16			Tagudhæng ved gavle modul 2 og 83
BD17			Tagudhæng ved gavle modul 42 og 43 - forplade i facadeelement fjernet
BD18			Planudsnit tagspær/udhæng



1 FD01

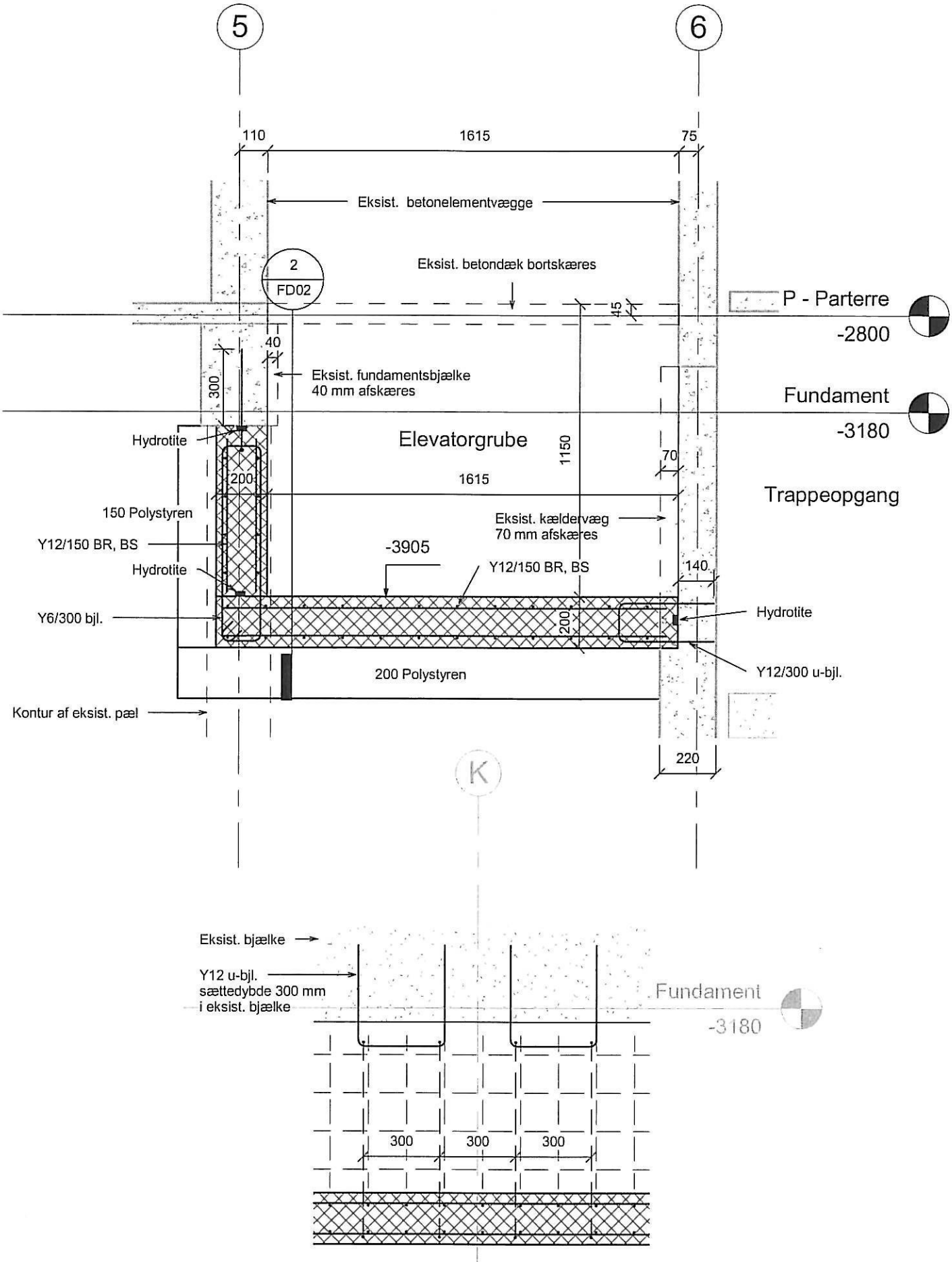
1 : 20

Plan af elevatorgrube ved kælder

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD01

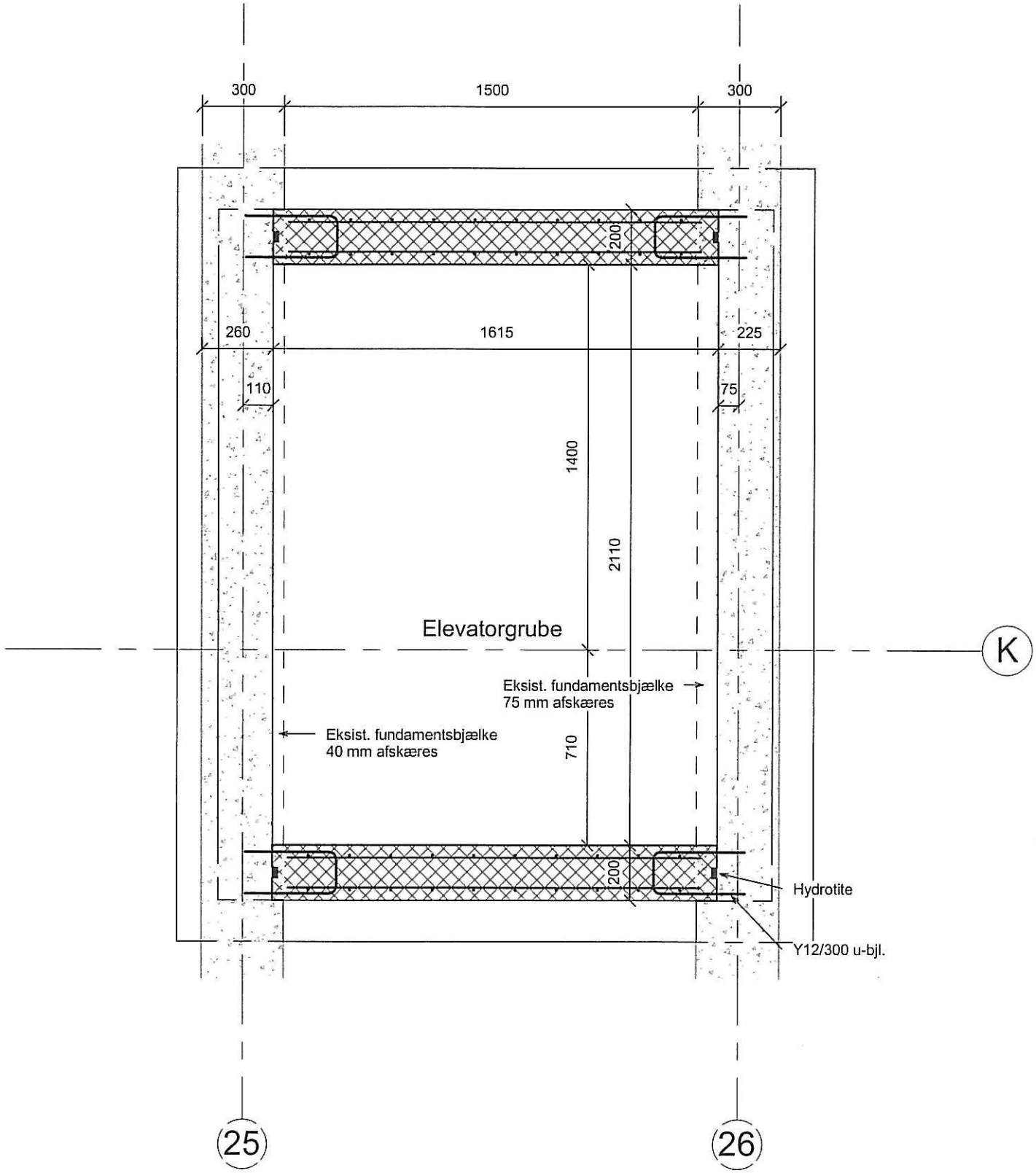


Snit i elevatorgrube ved kælder Opstalt 2

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD02

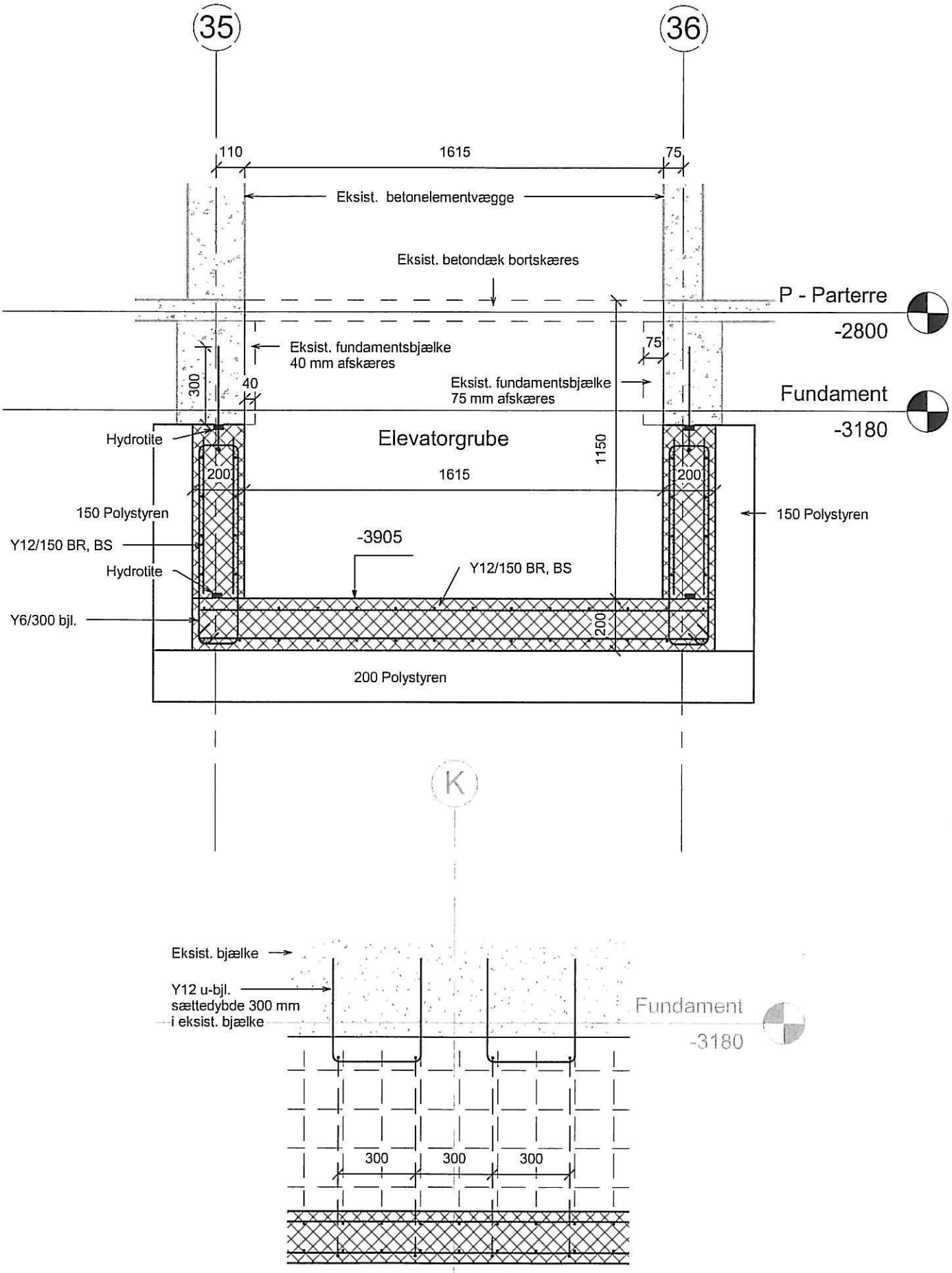


Plan af elevatorgrube

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD03

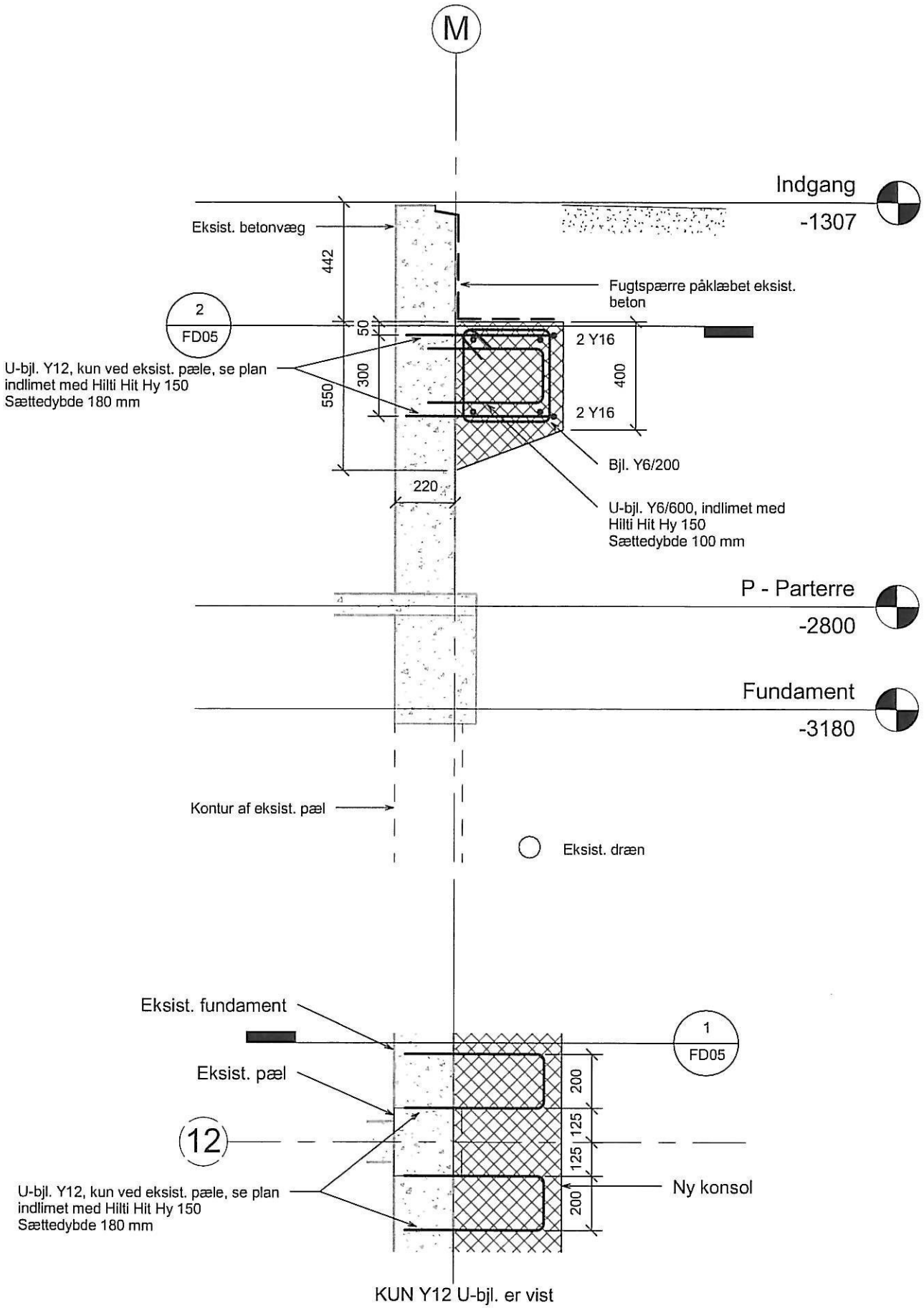


Snit i elevatorgrube Opstalt 2

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD04

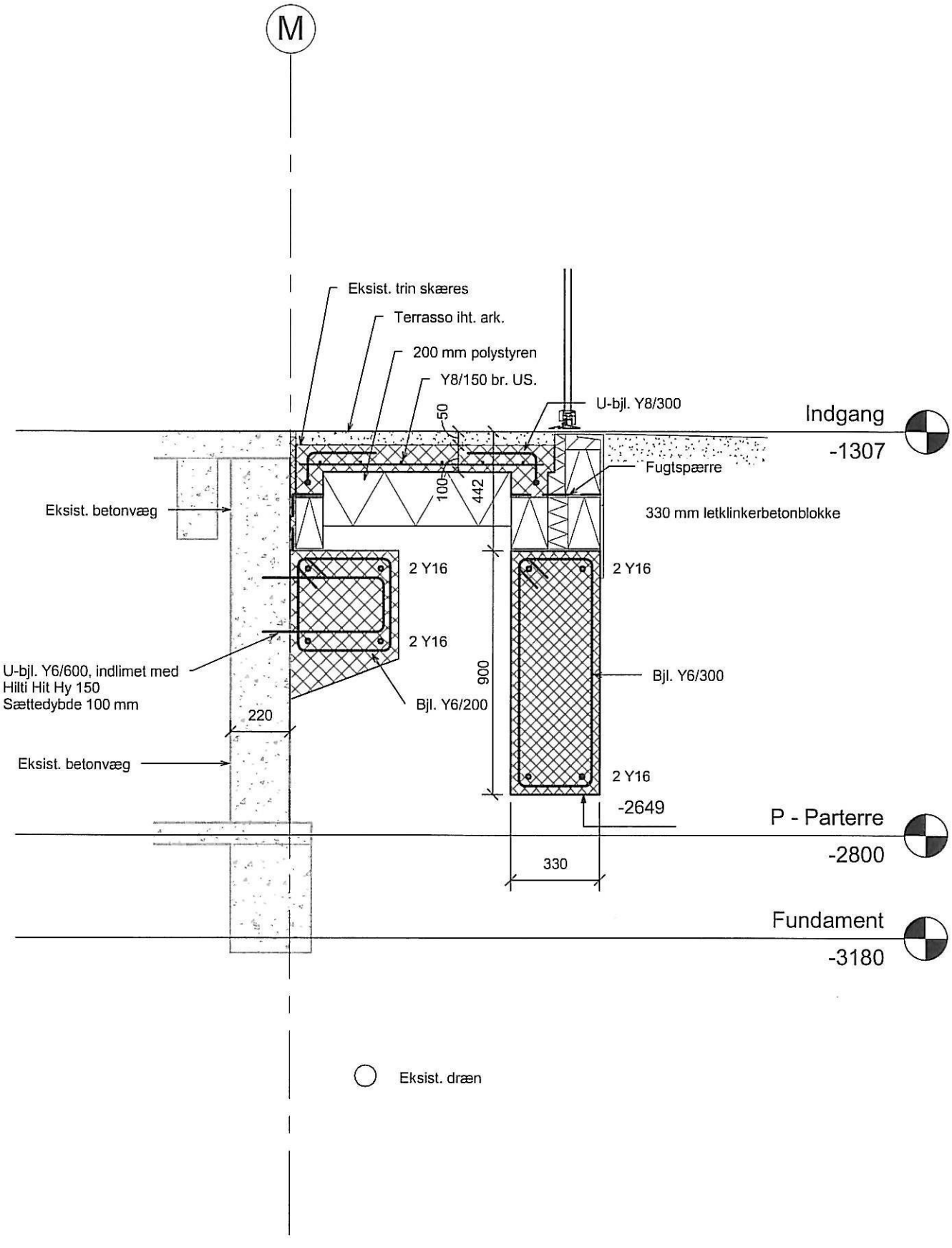


Princip for påstøbt konsol på eksist. betonkonstruktion - Facade mod nord

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD05

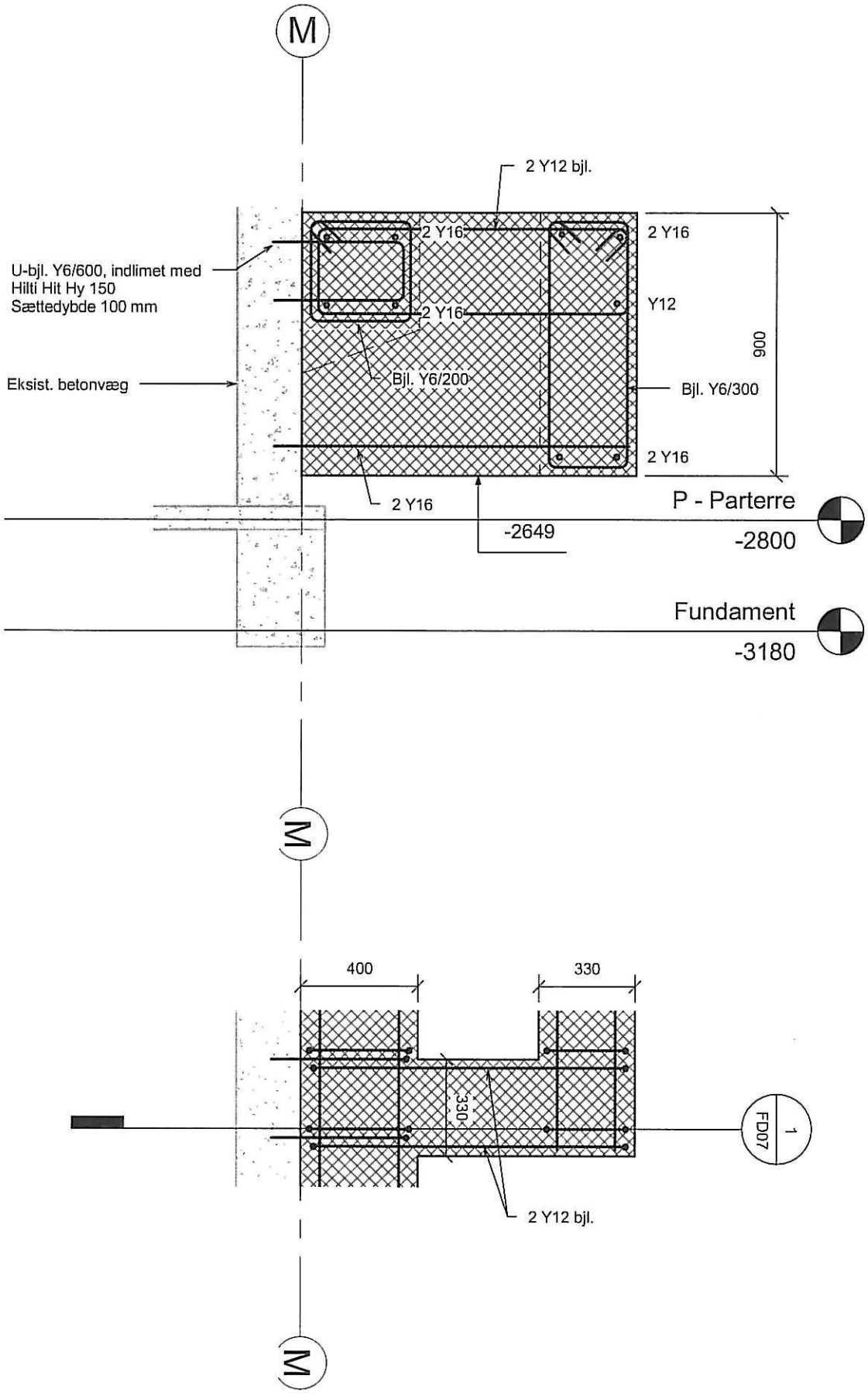


Fundament / terrændæk ved indgang

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD06

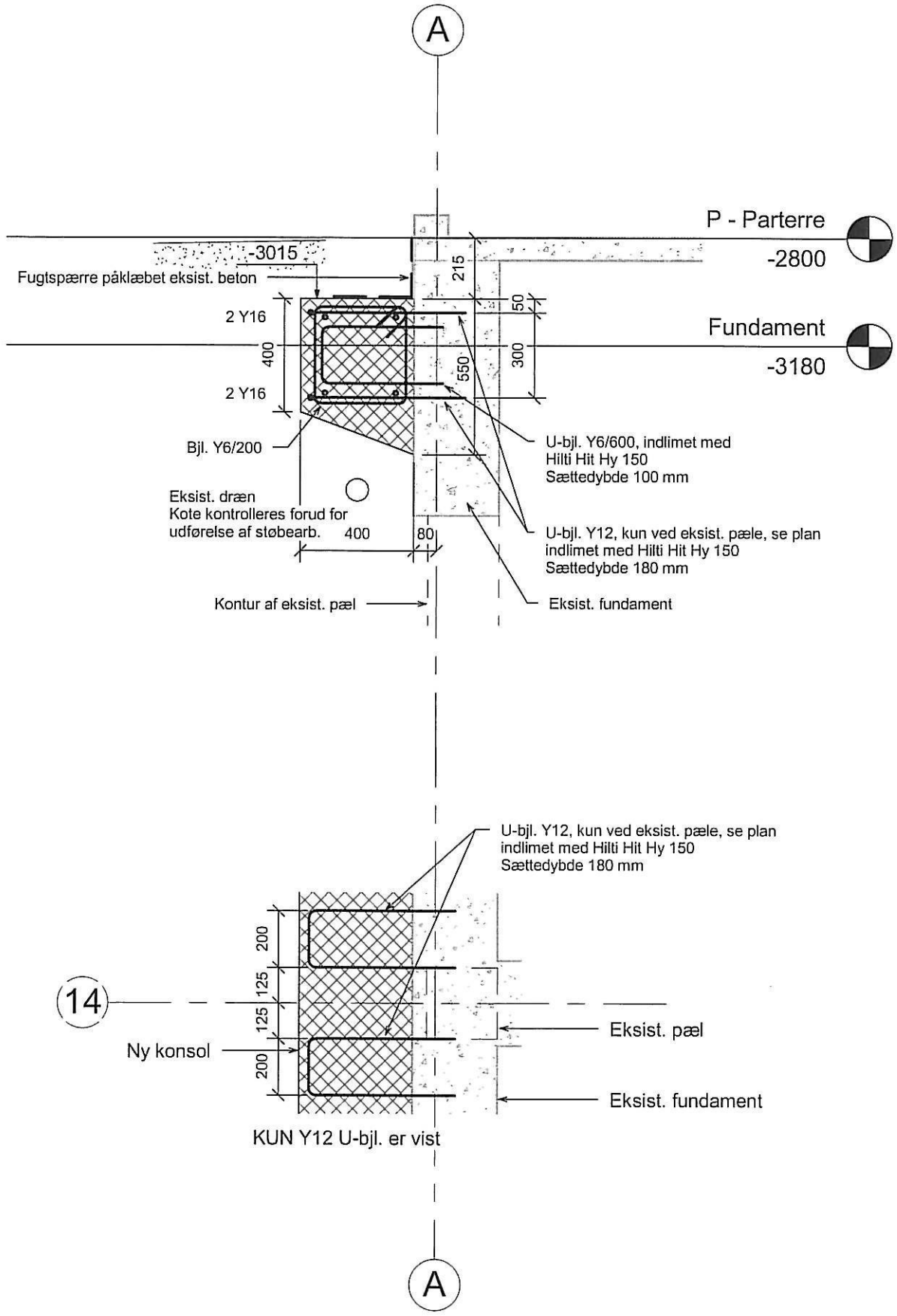


Ophængning af fundament ved indgang

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD07

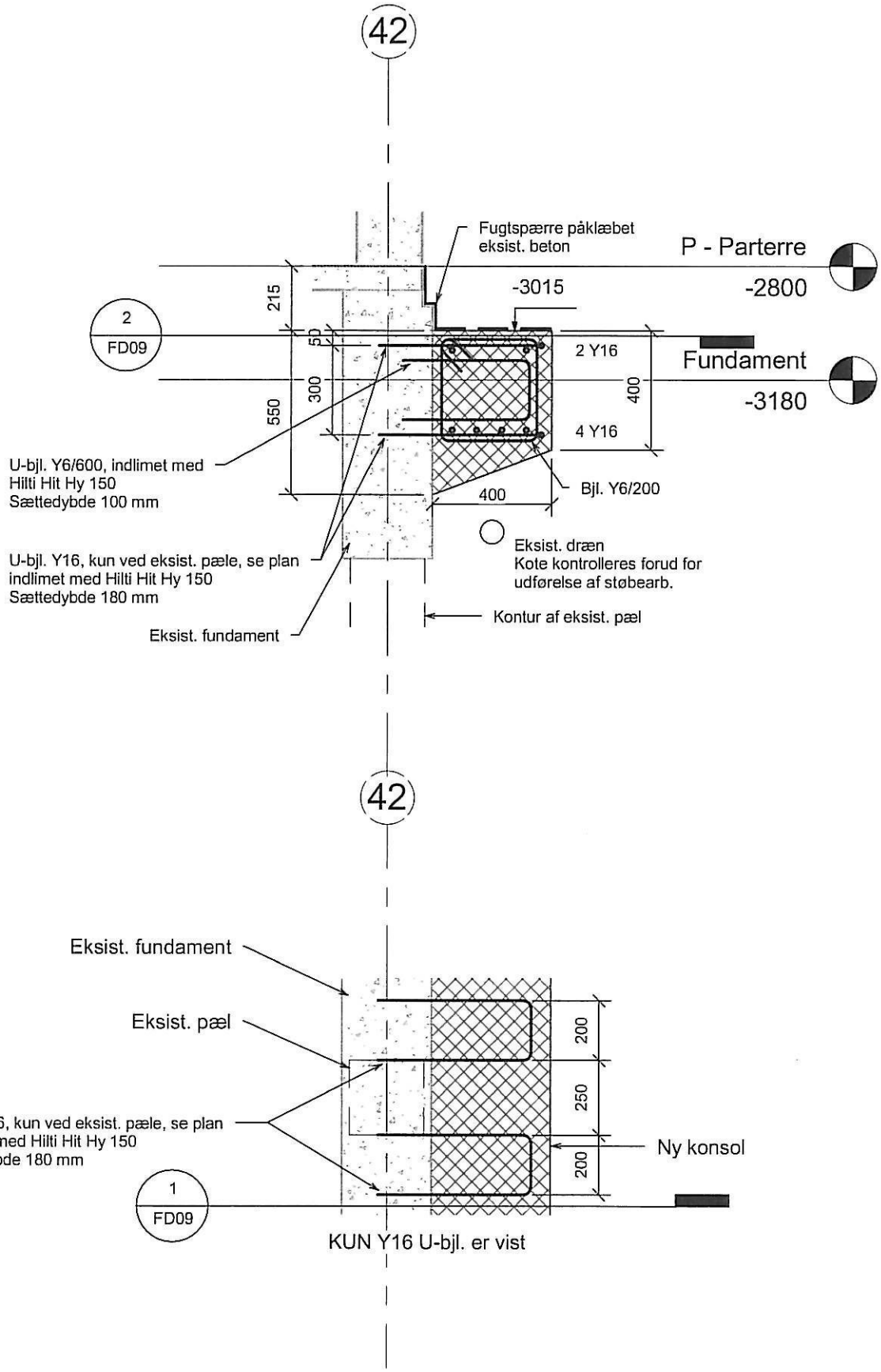


Princip for påstøbt konsol på eksist. betonkonstruktion - Facade mod syd

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD08

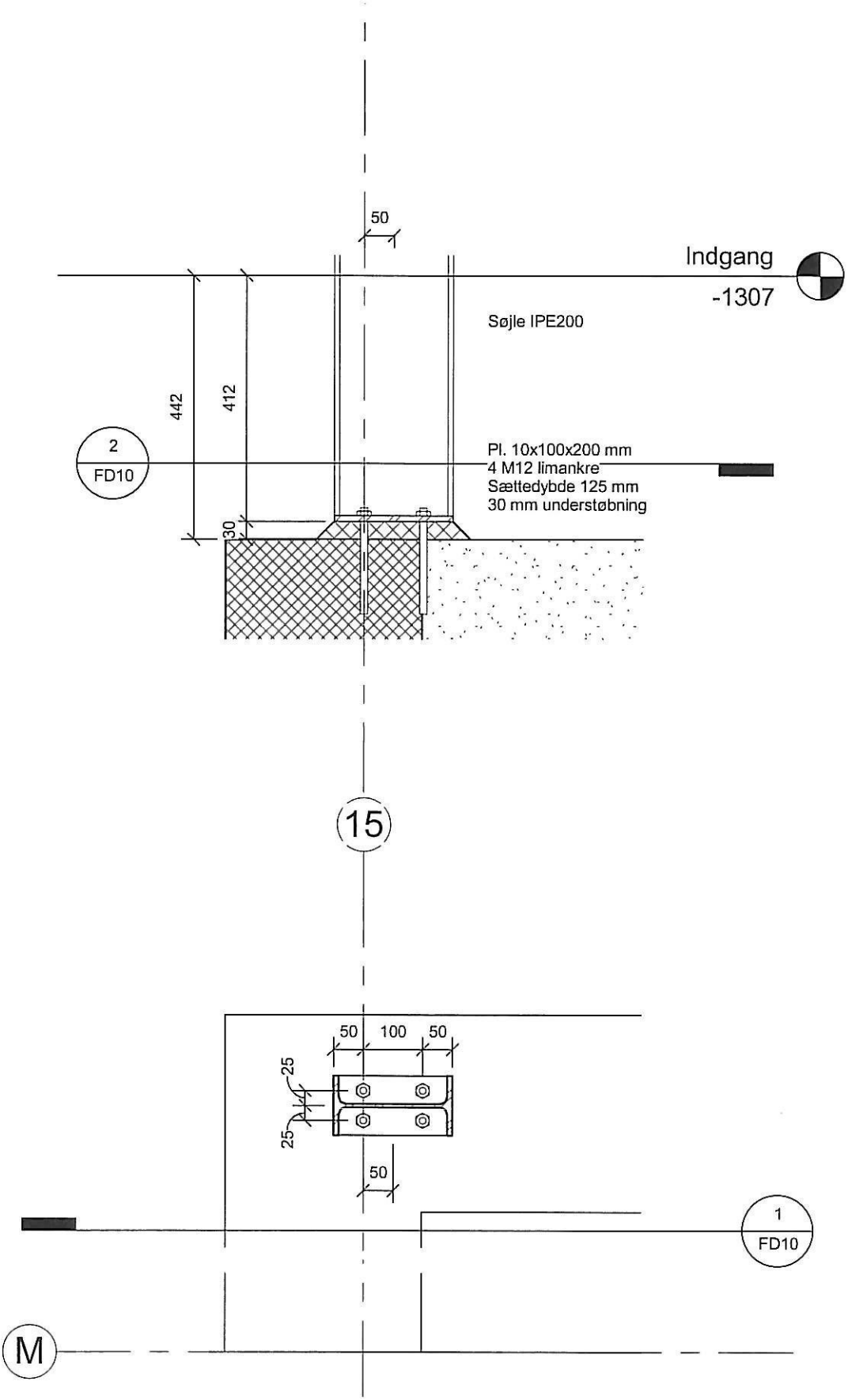


Princip for påstøbt konsol på eksist. betonkonstruktion - Gavle mod nord og syd

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	FD09

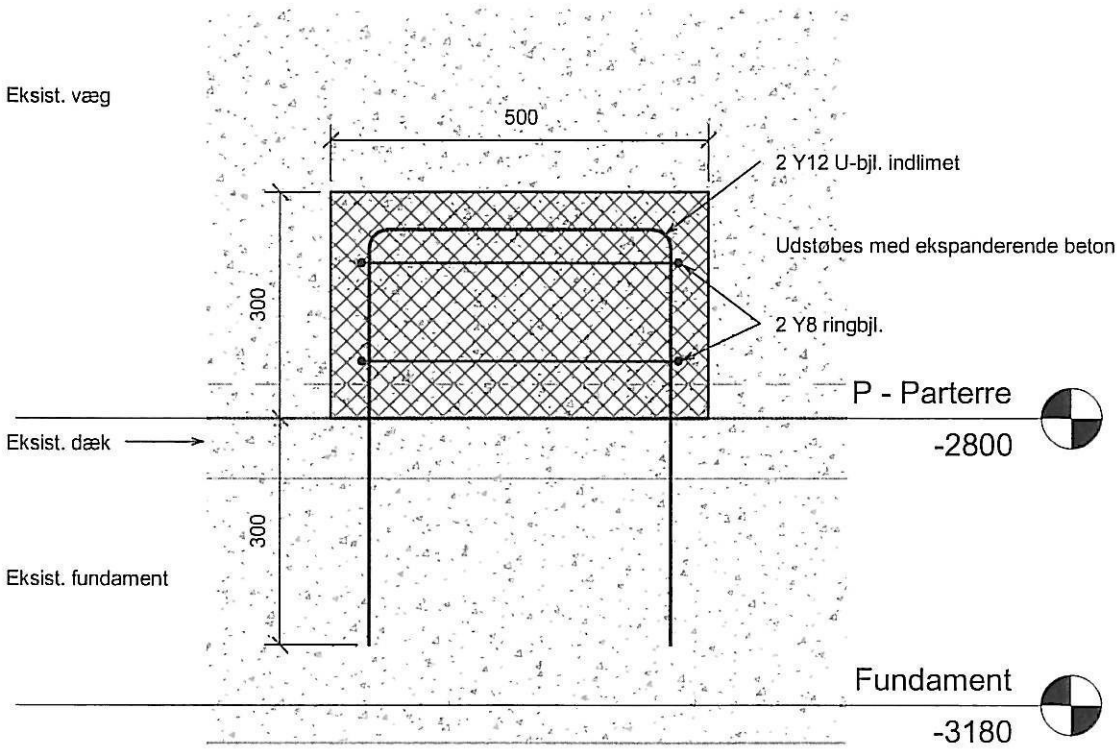


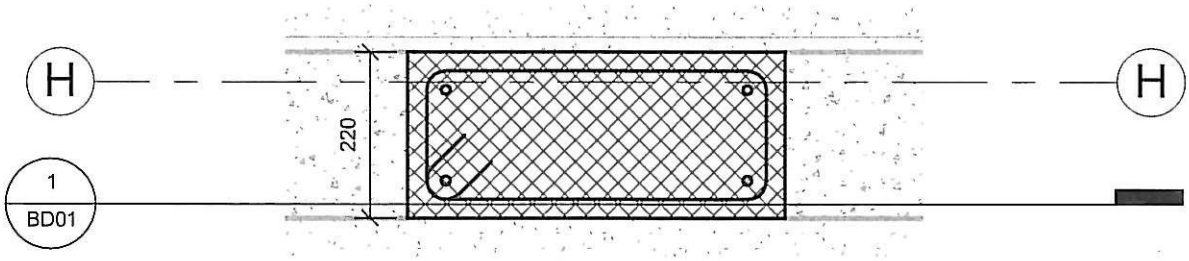
Søjle ved indgang

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	FD10





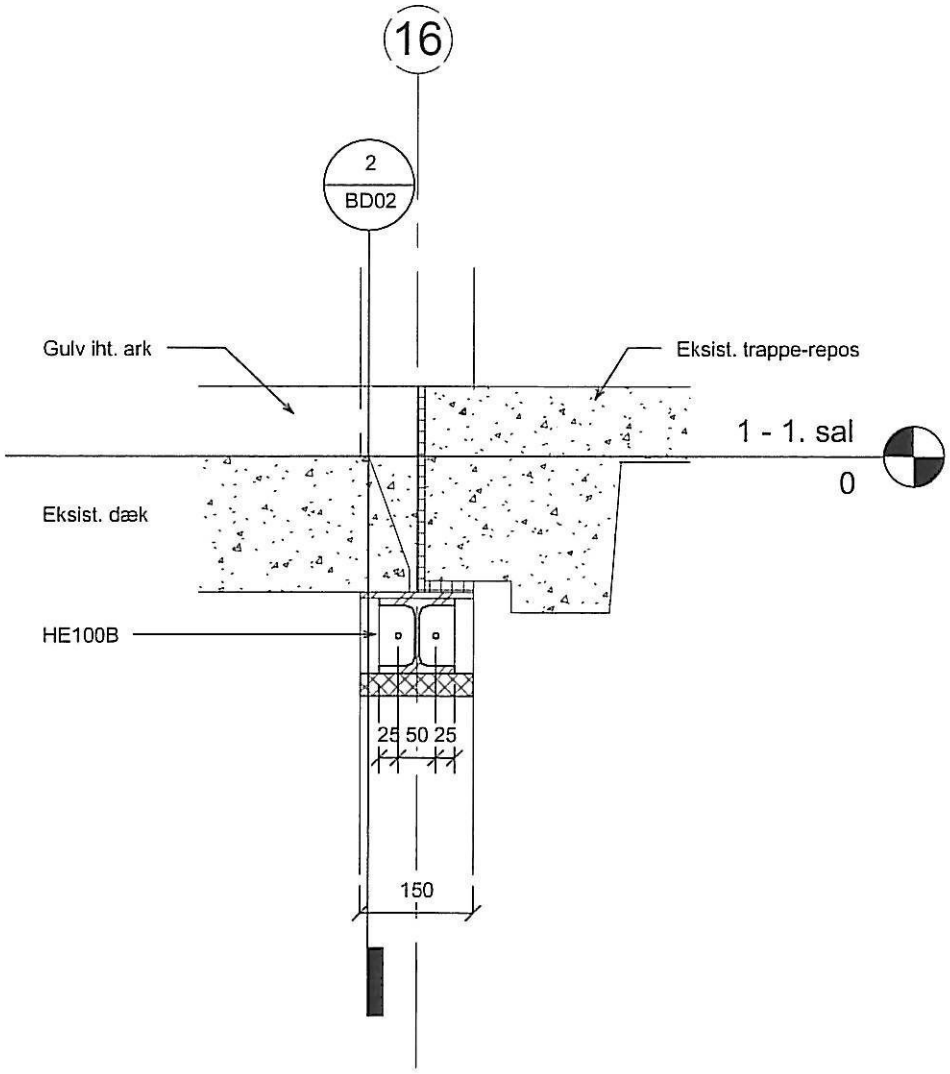
Ved 150 mm væg udføres kun en Y12 U-bjl.

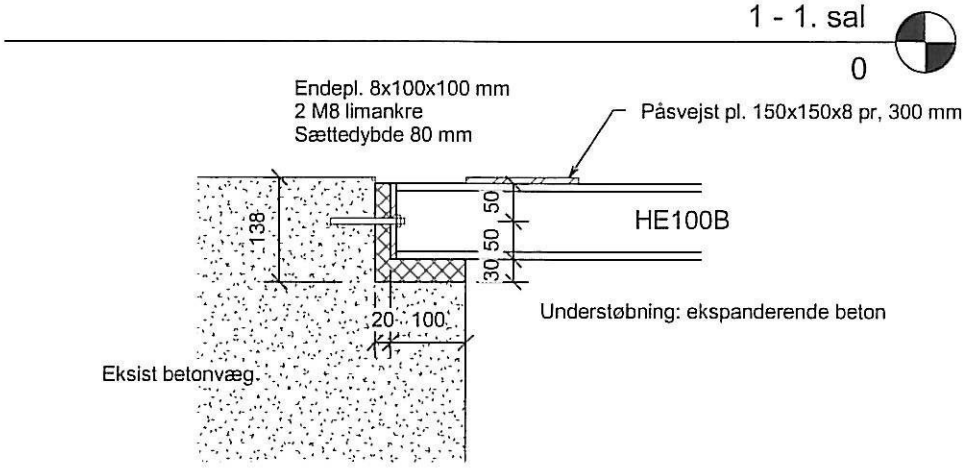
Glideforankring af vægge i Parterre

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD01



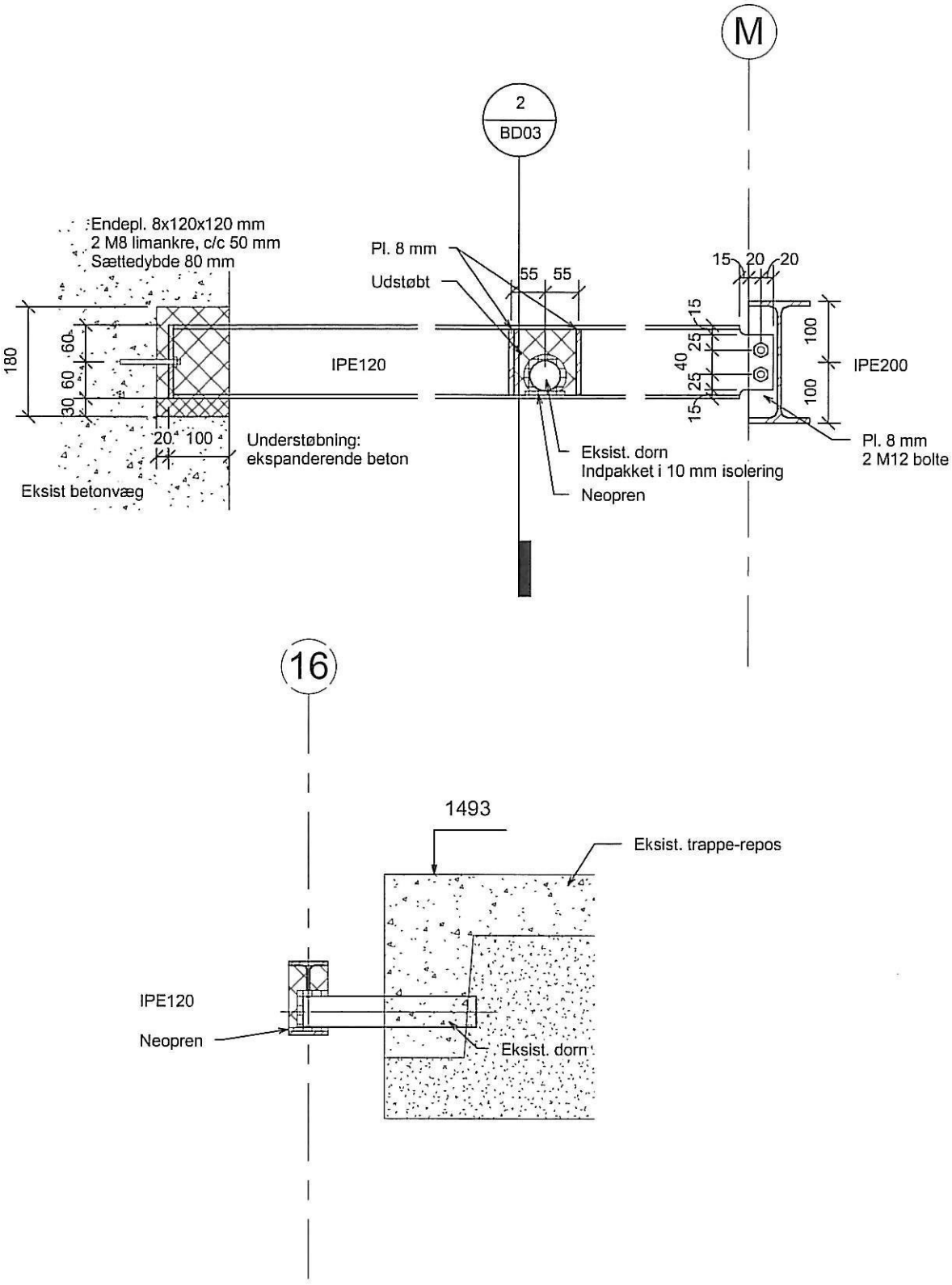


Stålbjælke i trapperum - ved repos og eksist. dæk

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD02

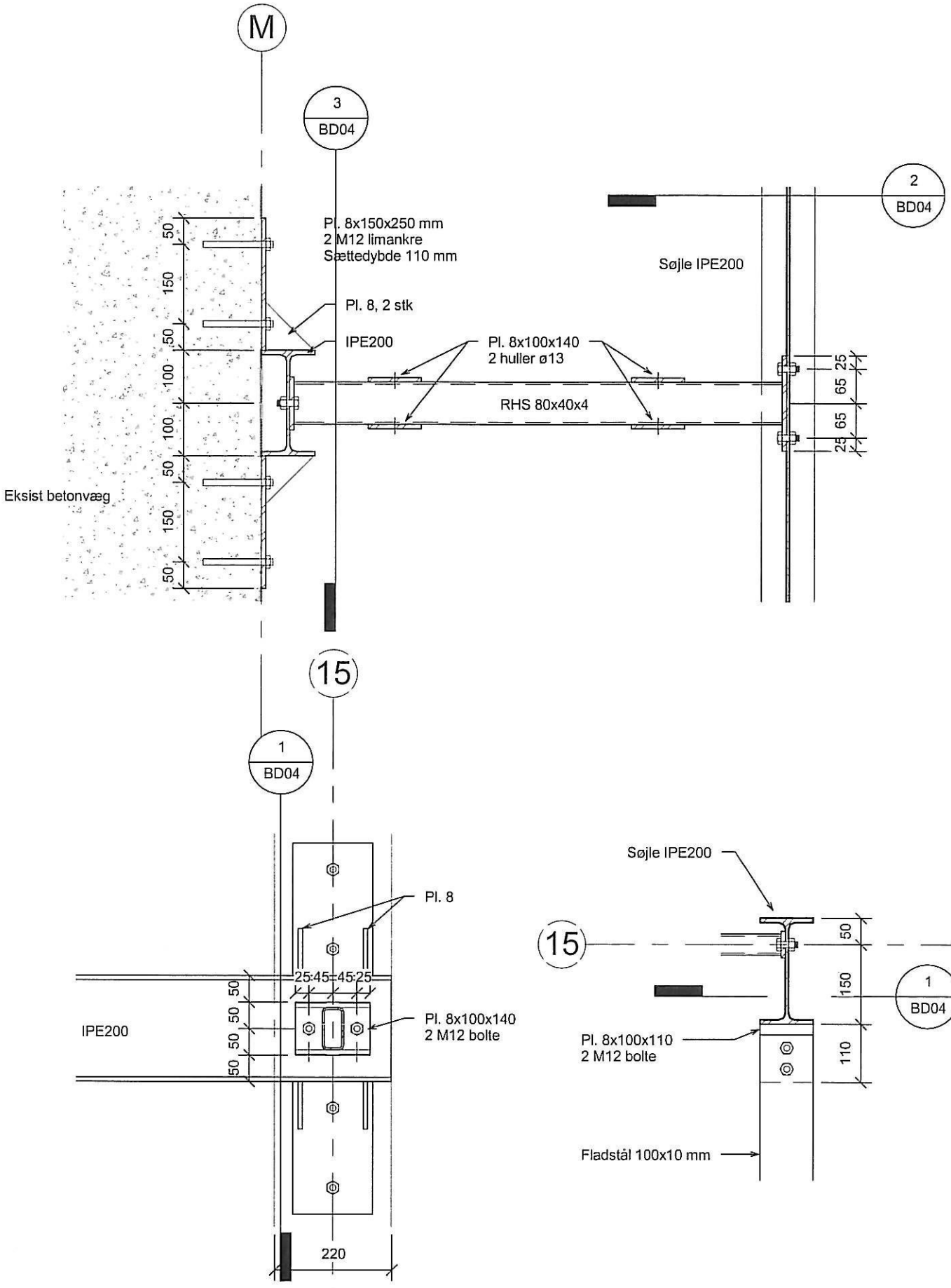


Stålbjælke i trapperum - ved repos

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD03

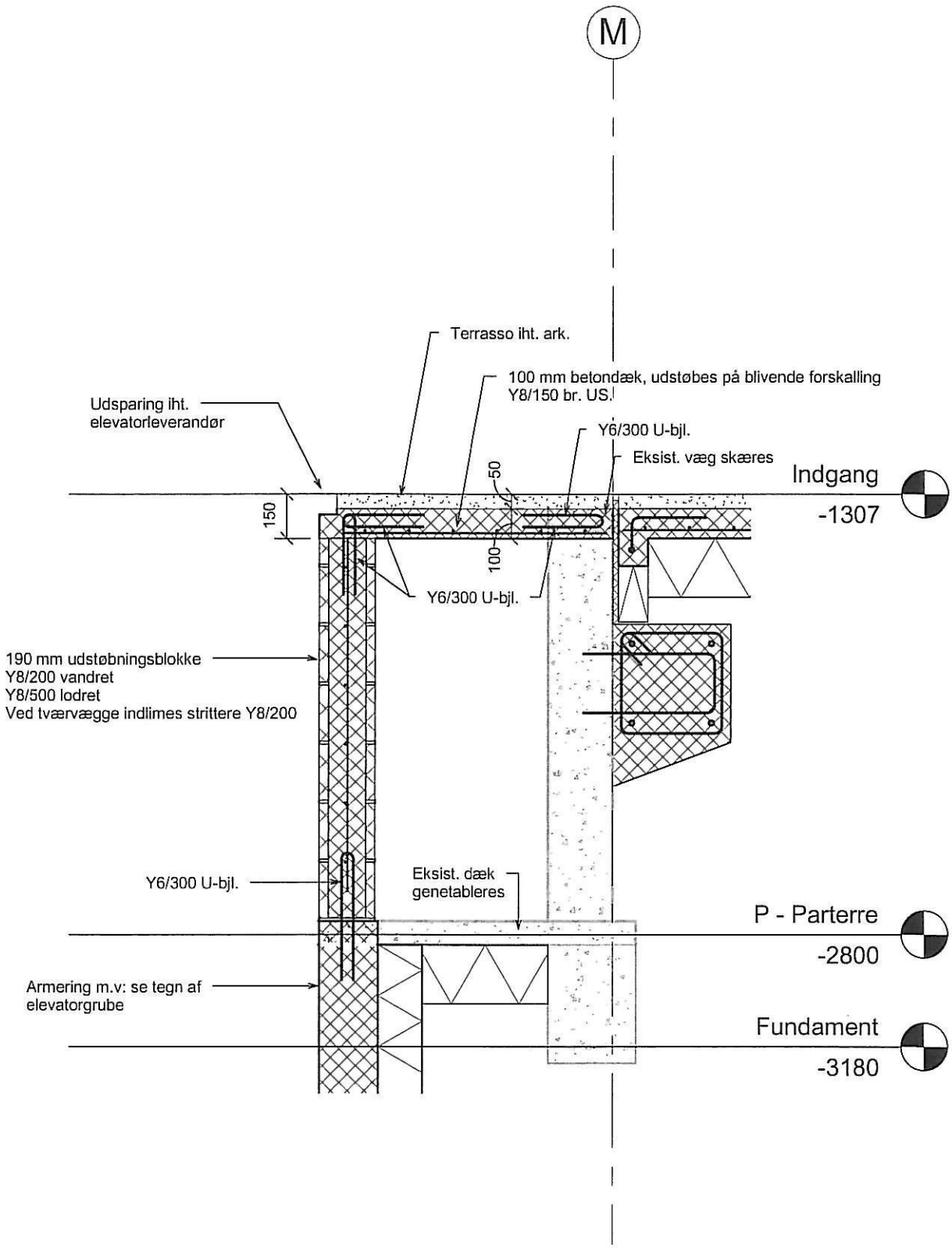


Stålbjælker i trapperum - ved indgang

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD04

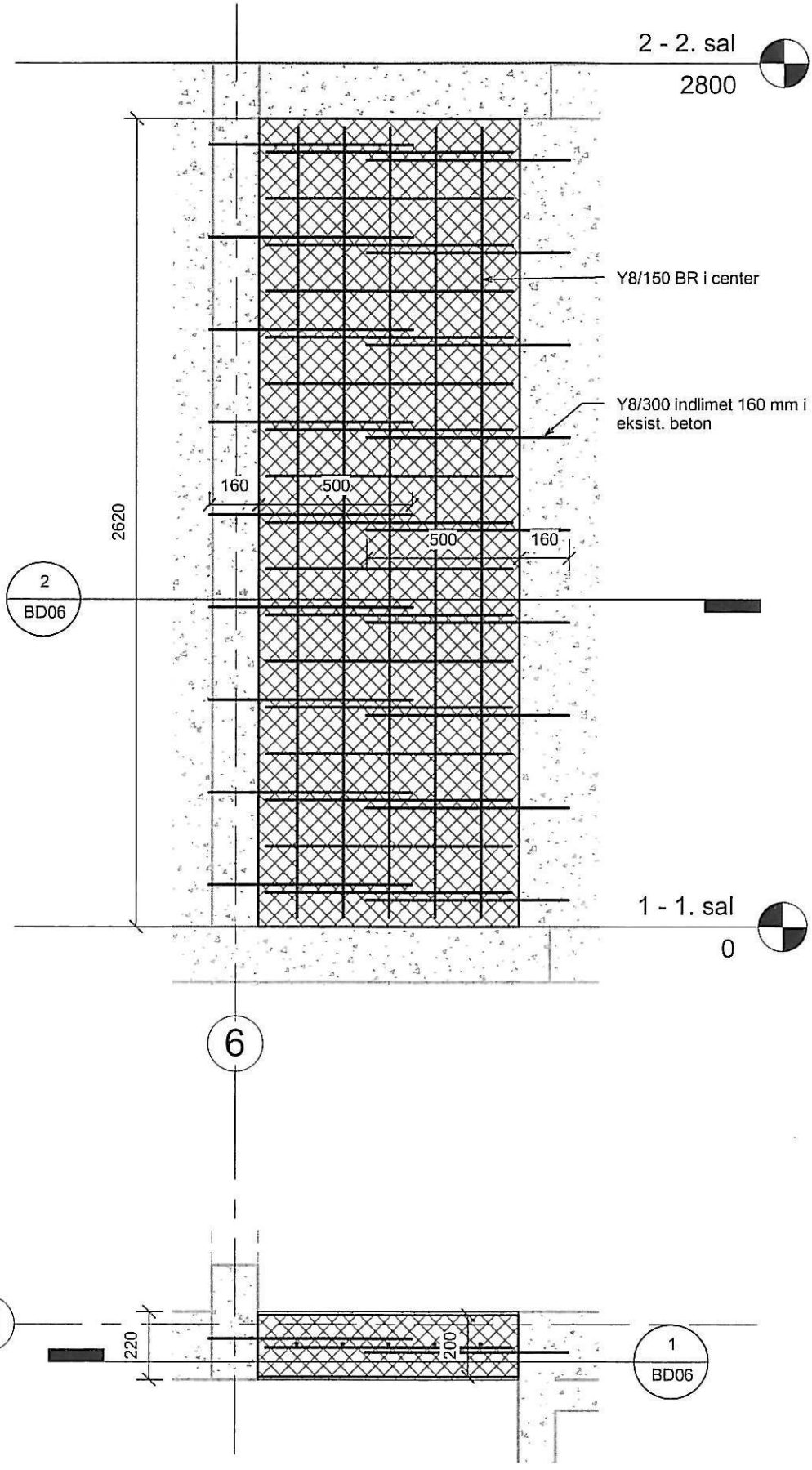


Skaktvæg og dæk ved indgang - parterre

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD05

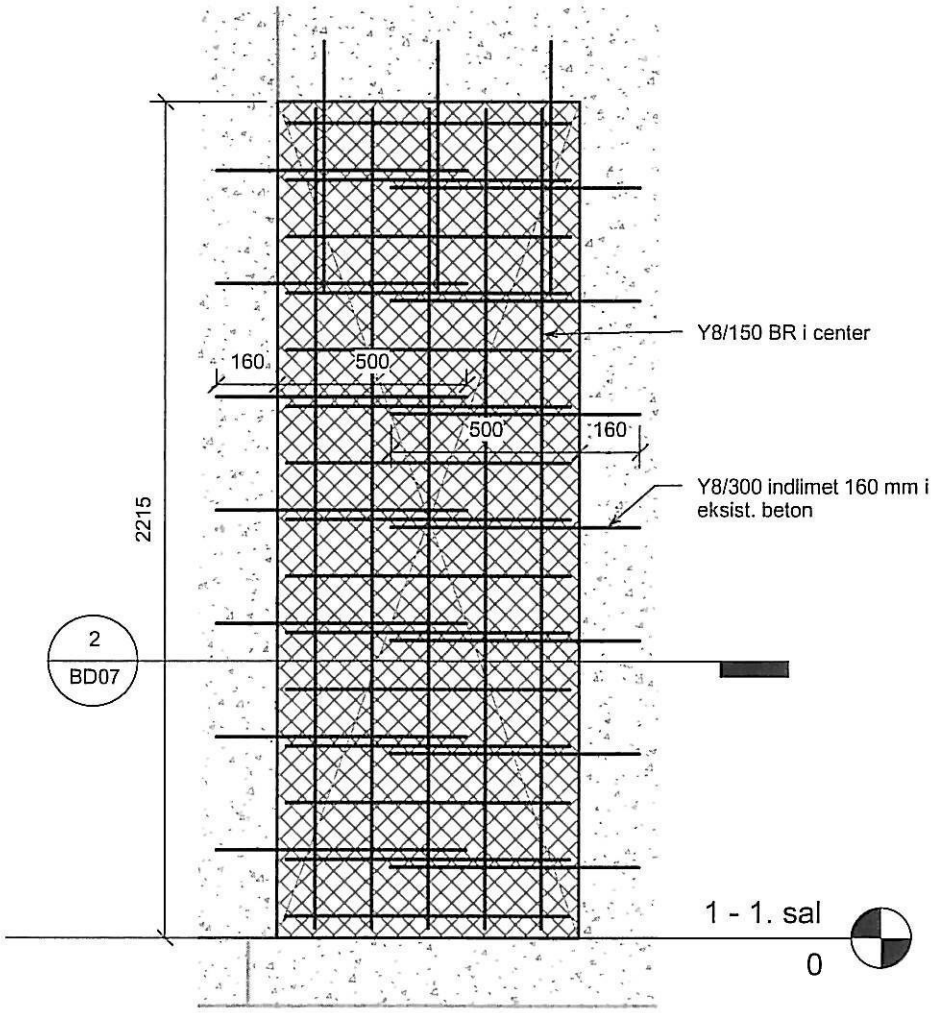


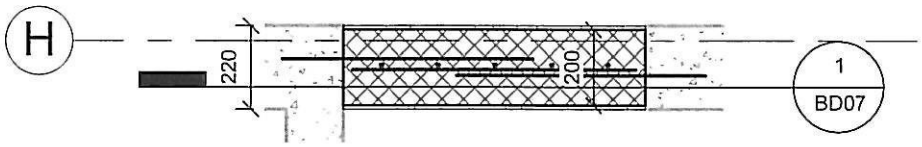
Betonudstøbning i eksist. dørhul

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD06



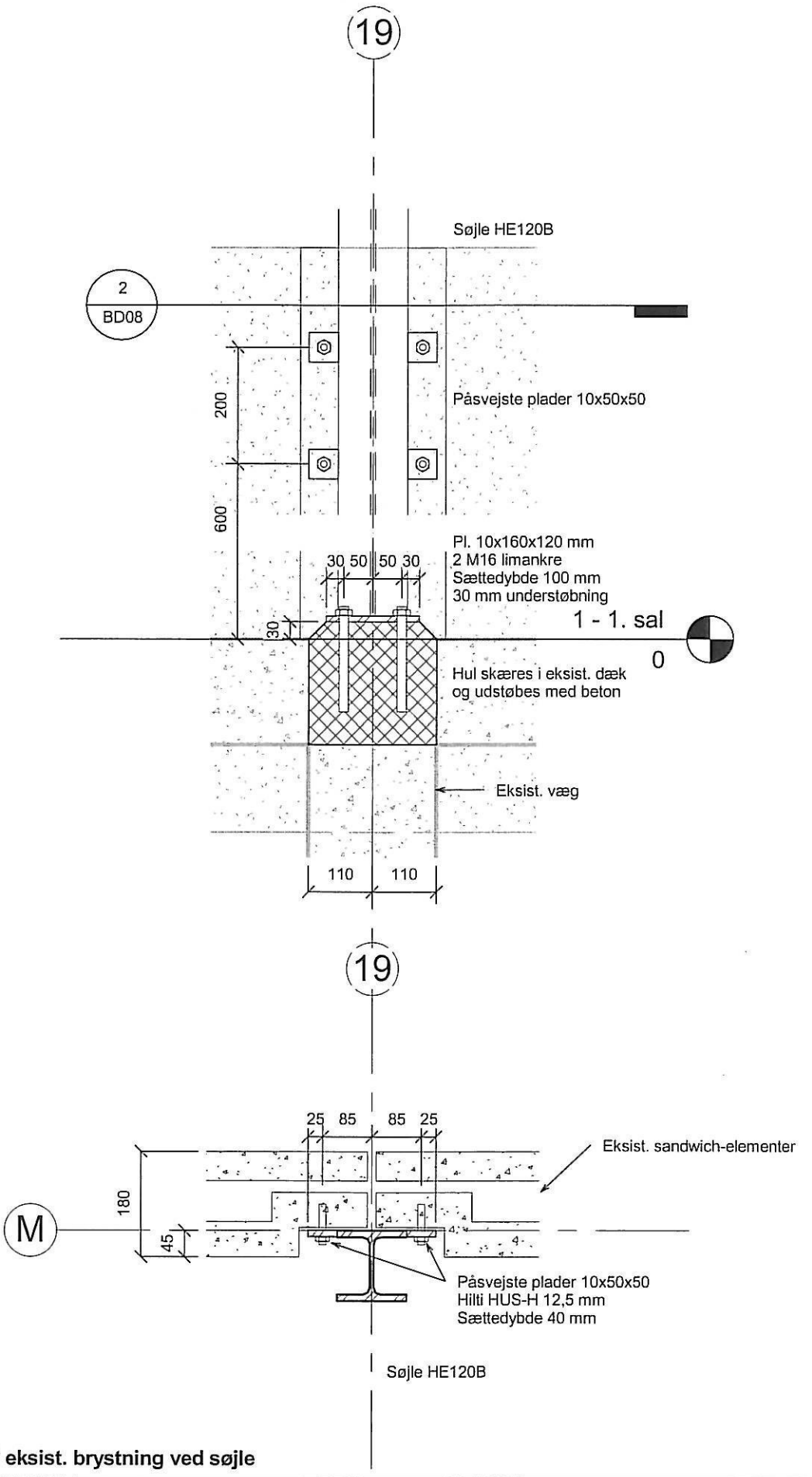


Betonudstøbning i eksist. dørhul

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD07

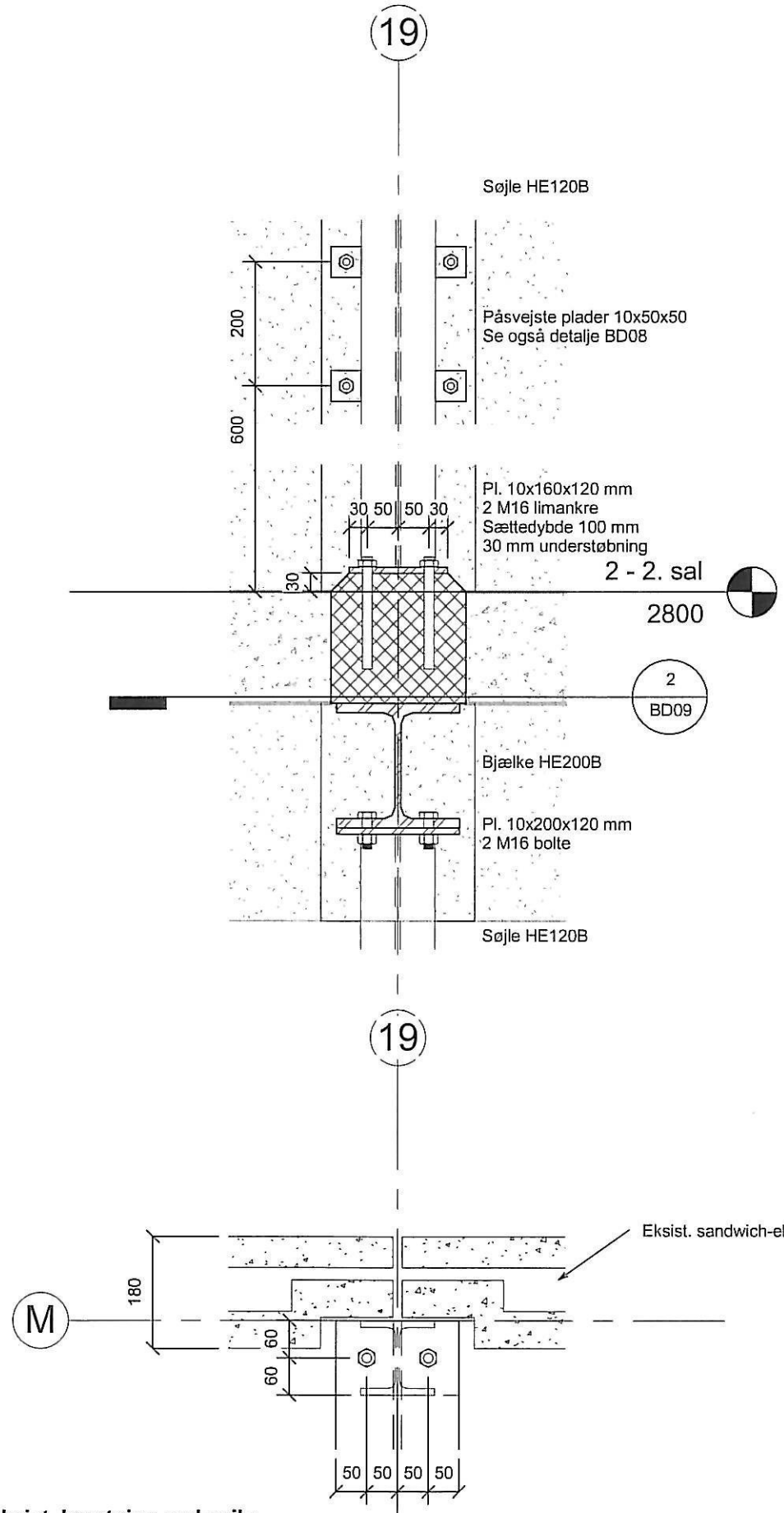


Ophængning af eksist. brystning ved søjle

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD08

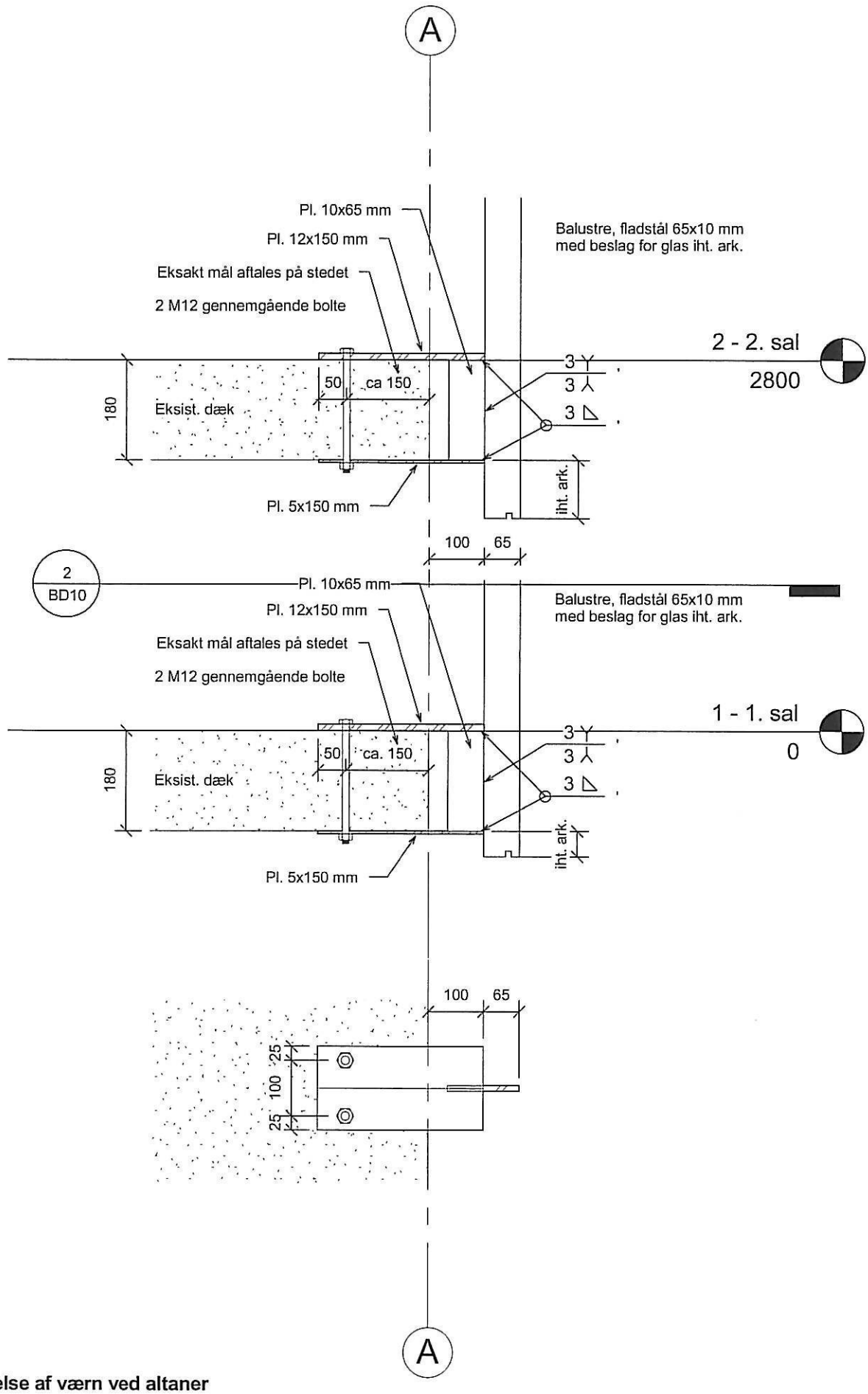


Ophængning af eksist. brystning ved søjle

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD09

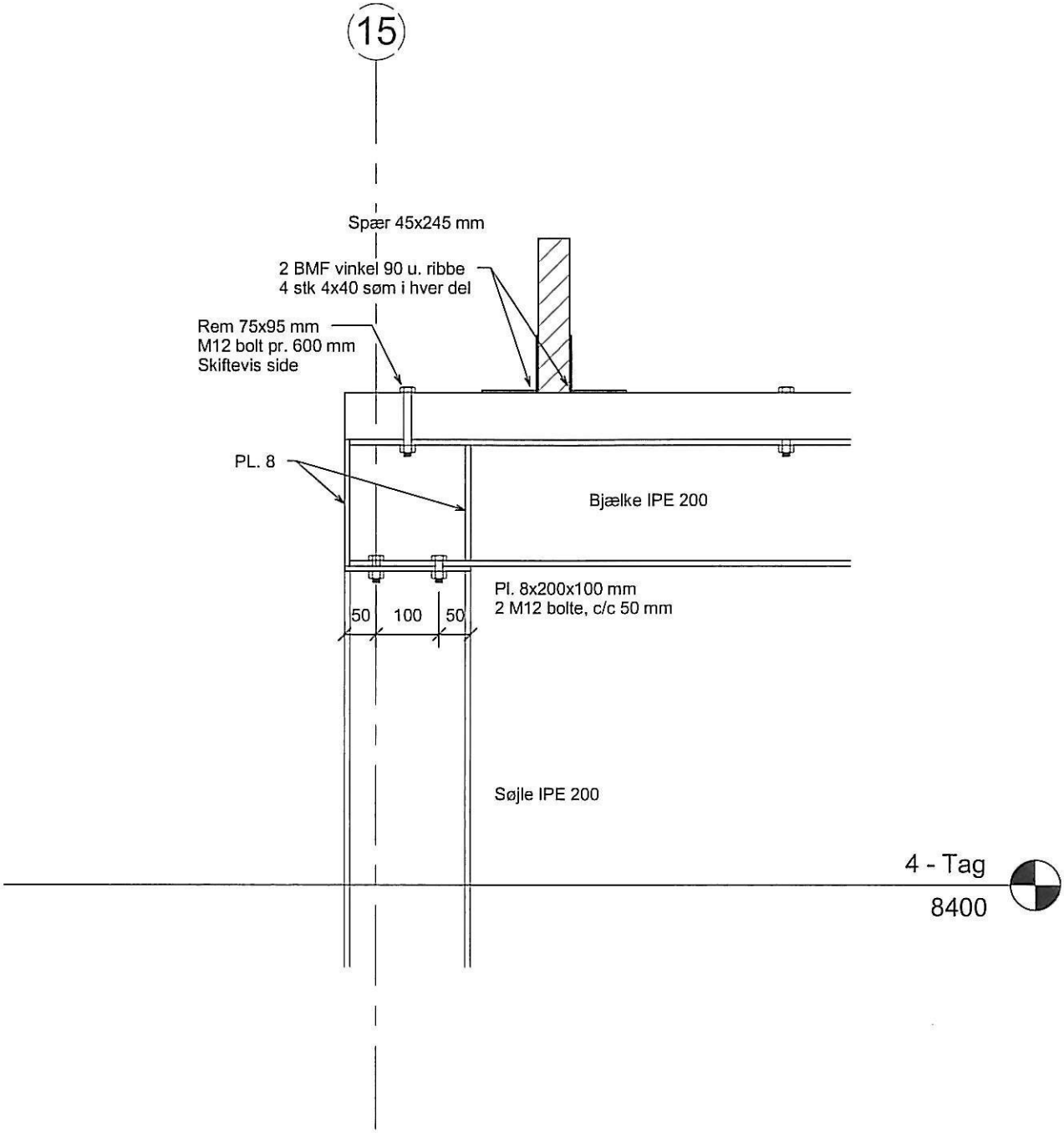


Fastgørelse af værn ved altaner

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD10

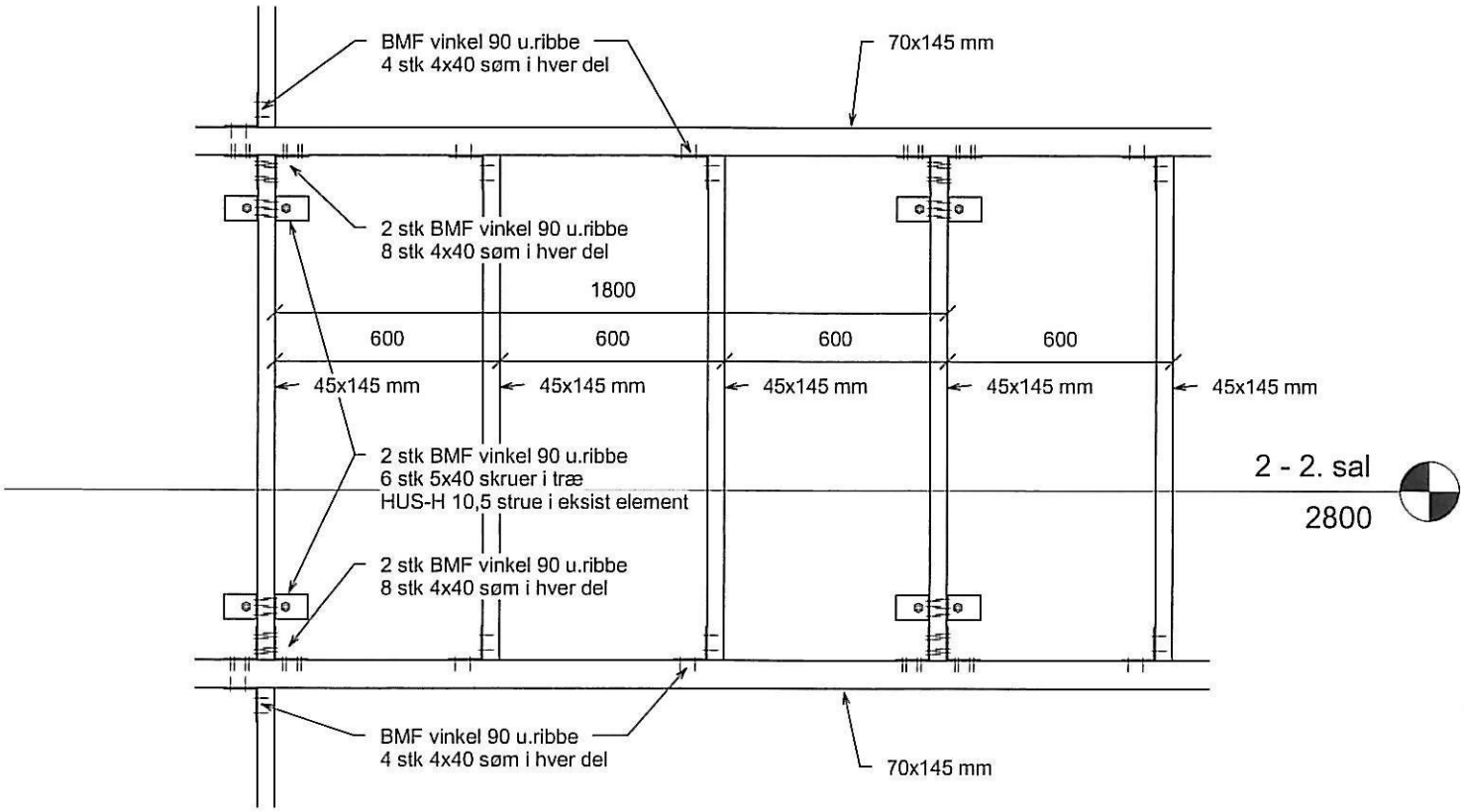


Topbjælke ved indgang

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 10	BD11

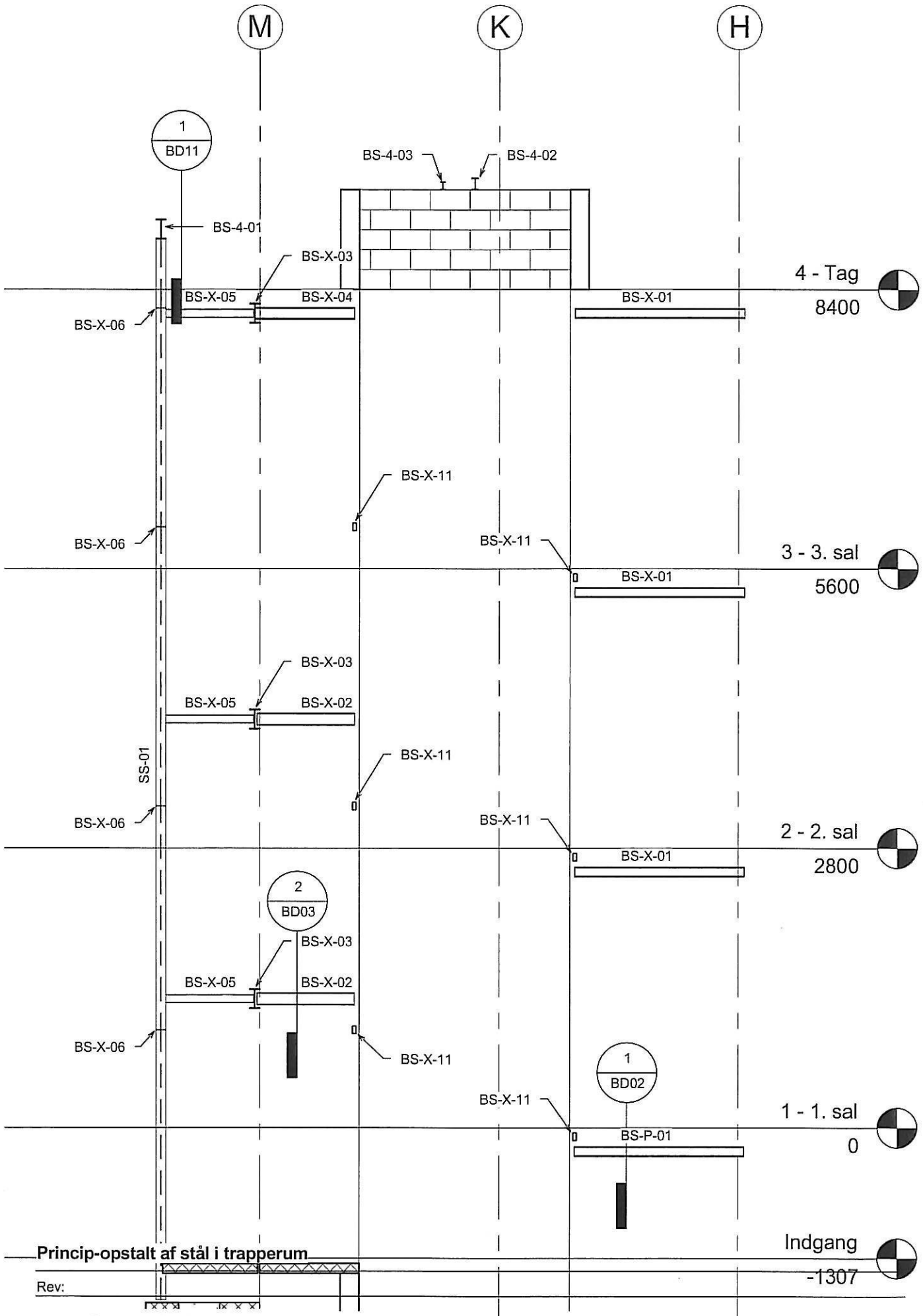


Princip for opbygning og fastgørelse af let facadekonstruktion

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD12

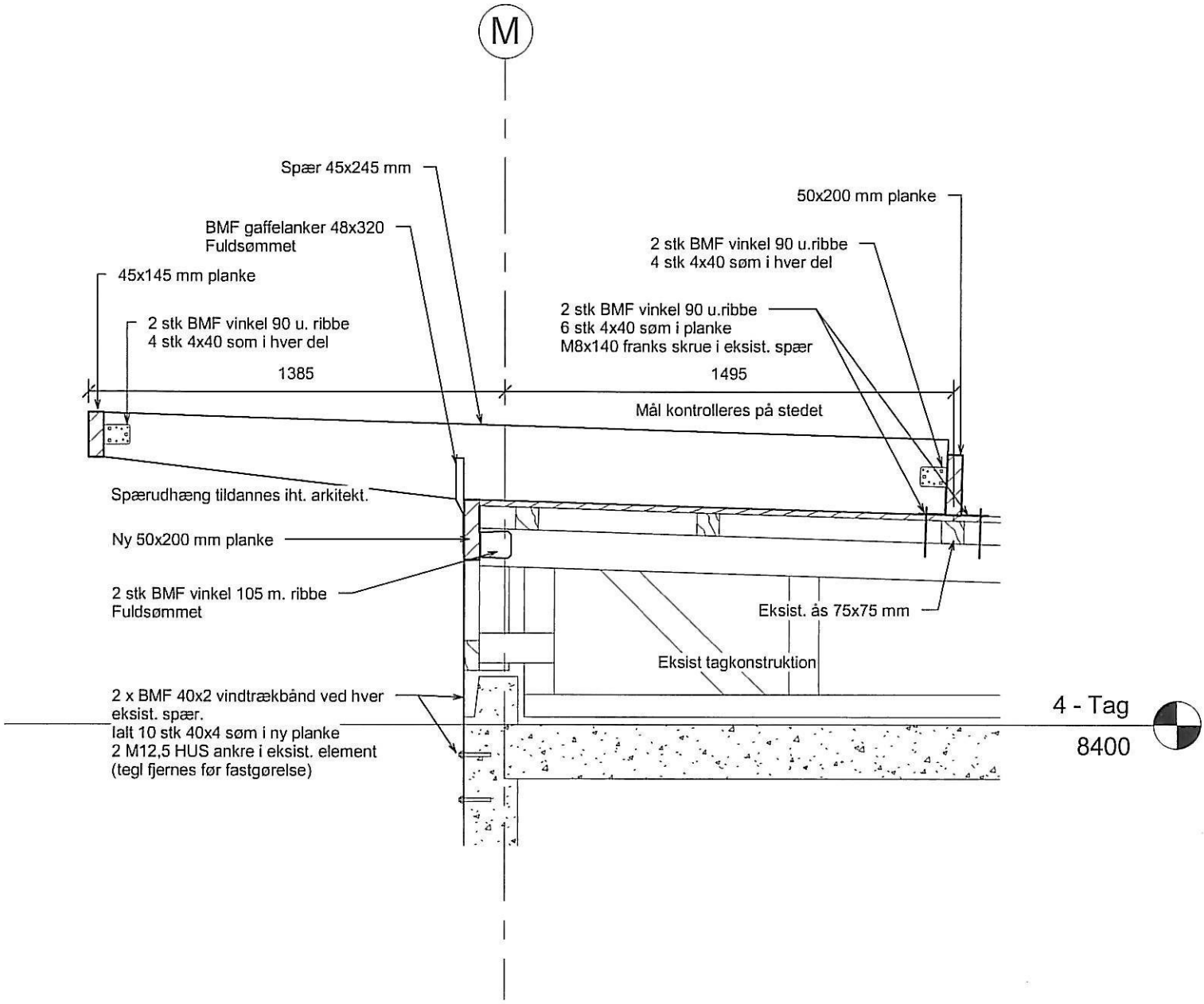


Princip-opstalt af stål i trapperum

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 50	BD13

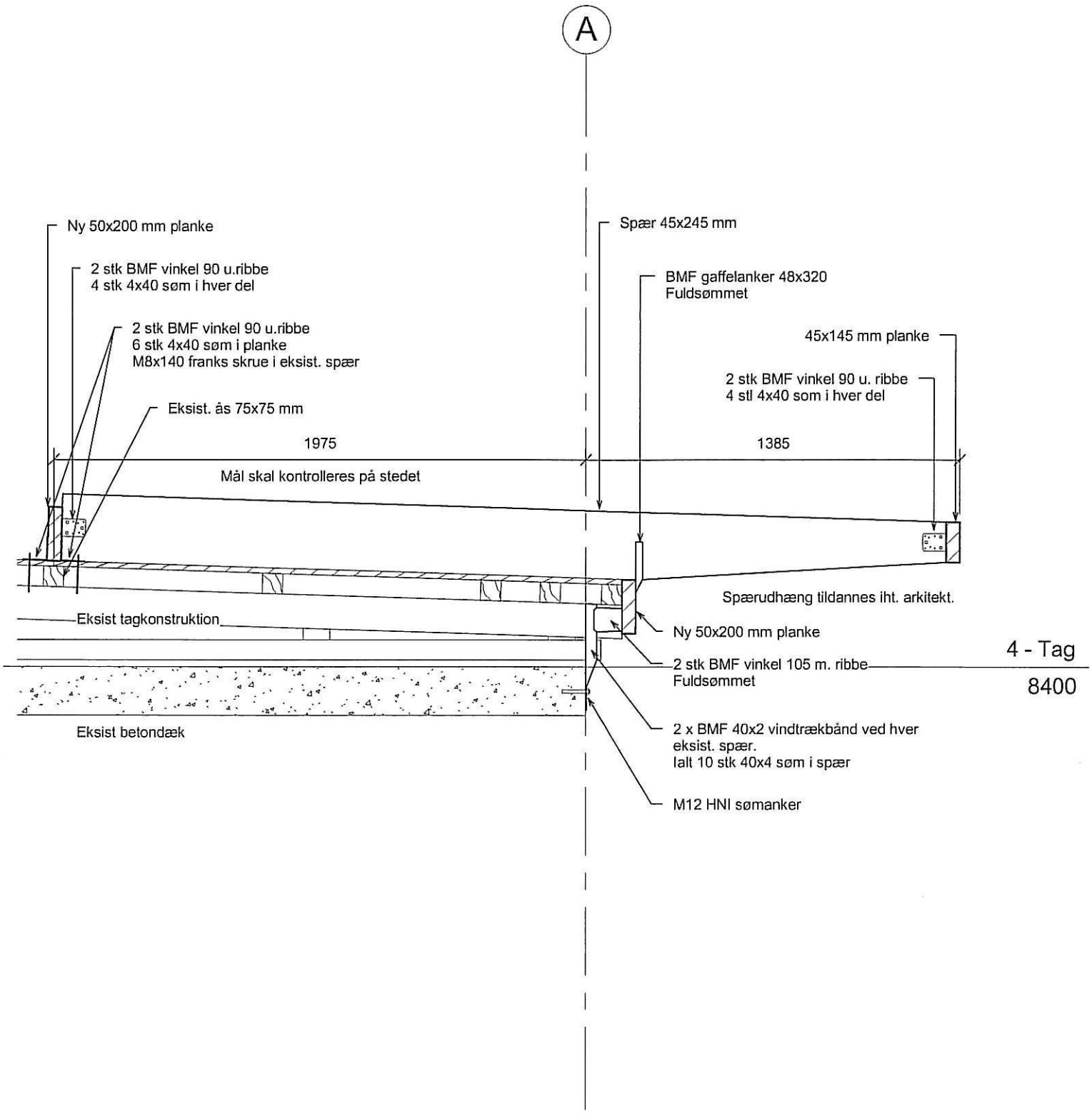


Tagudhæng ved modul M

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD14

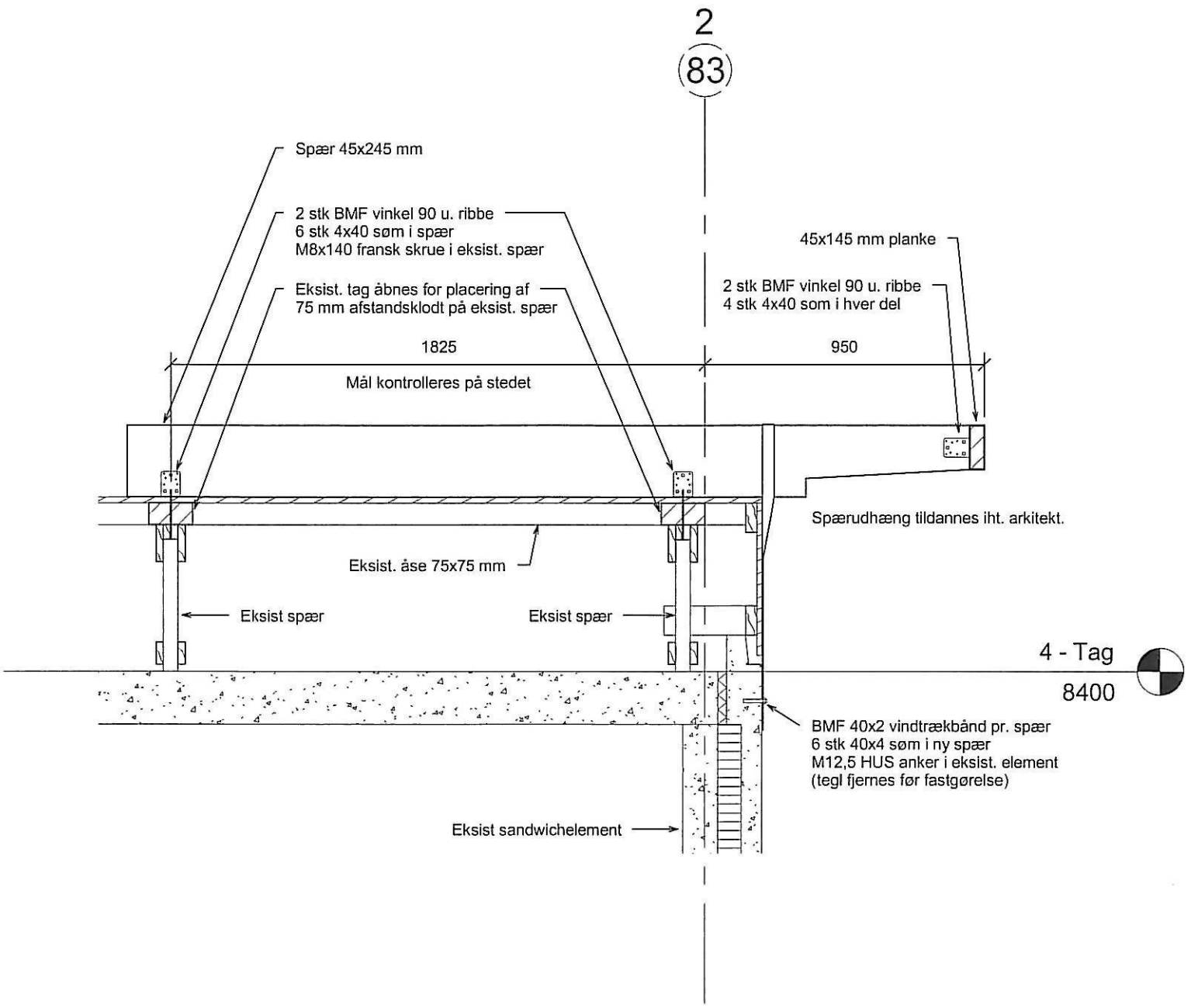


Tagudhæng ved modul A

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD15

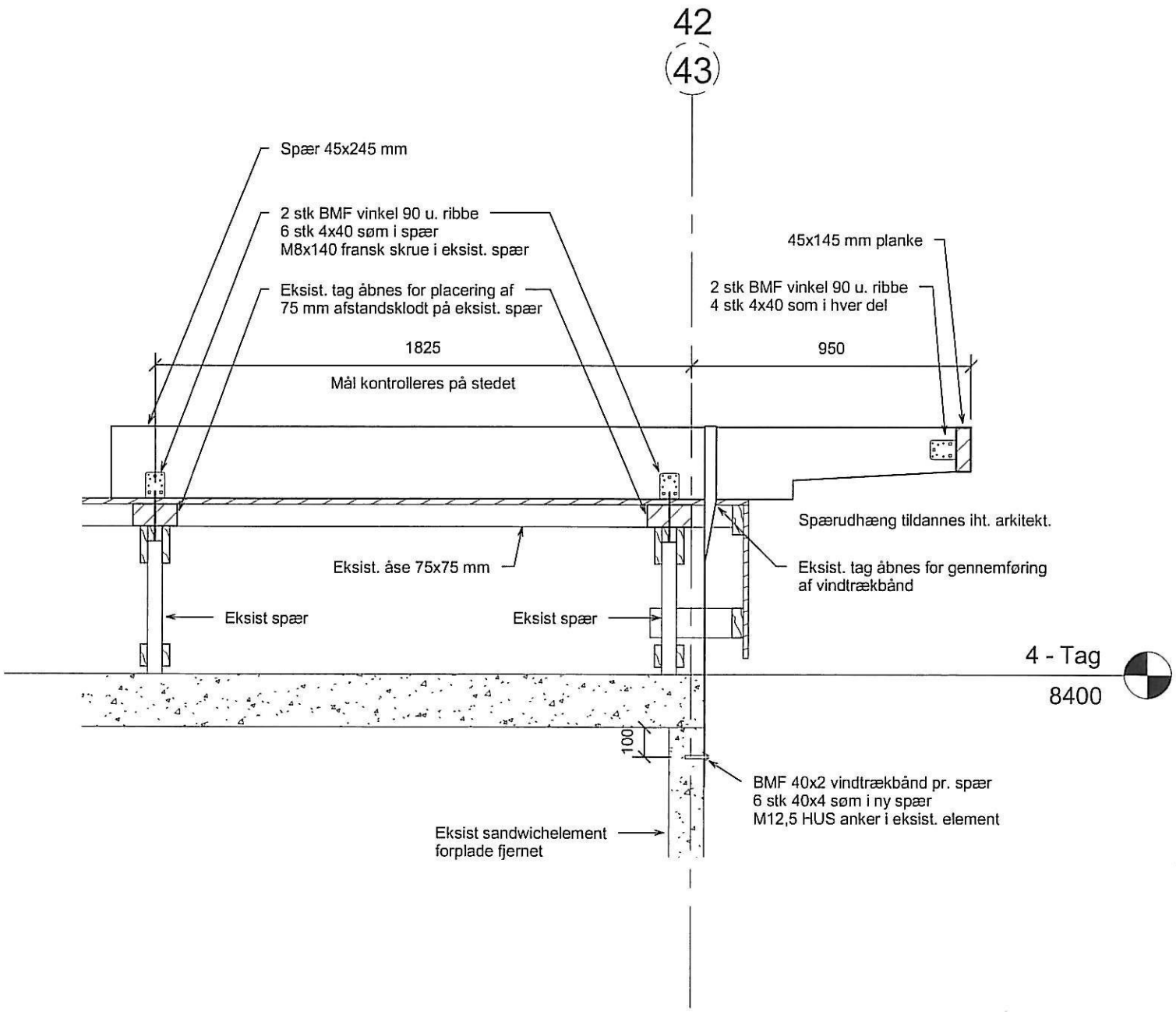


Tagudhæng ved gavle modul 2 og 83

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD16

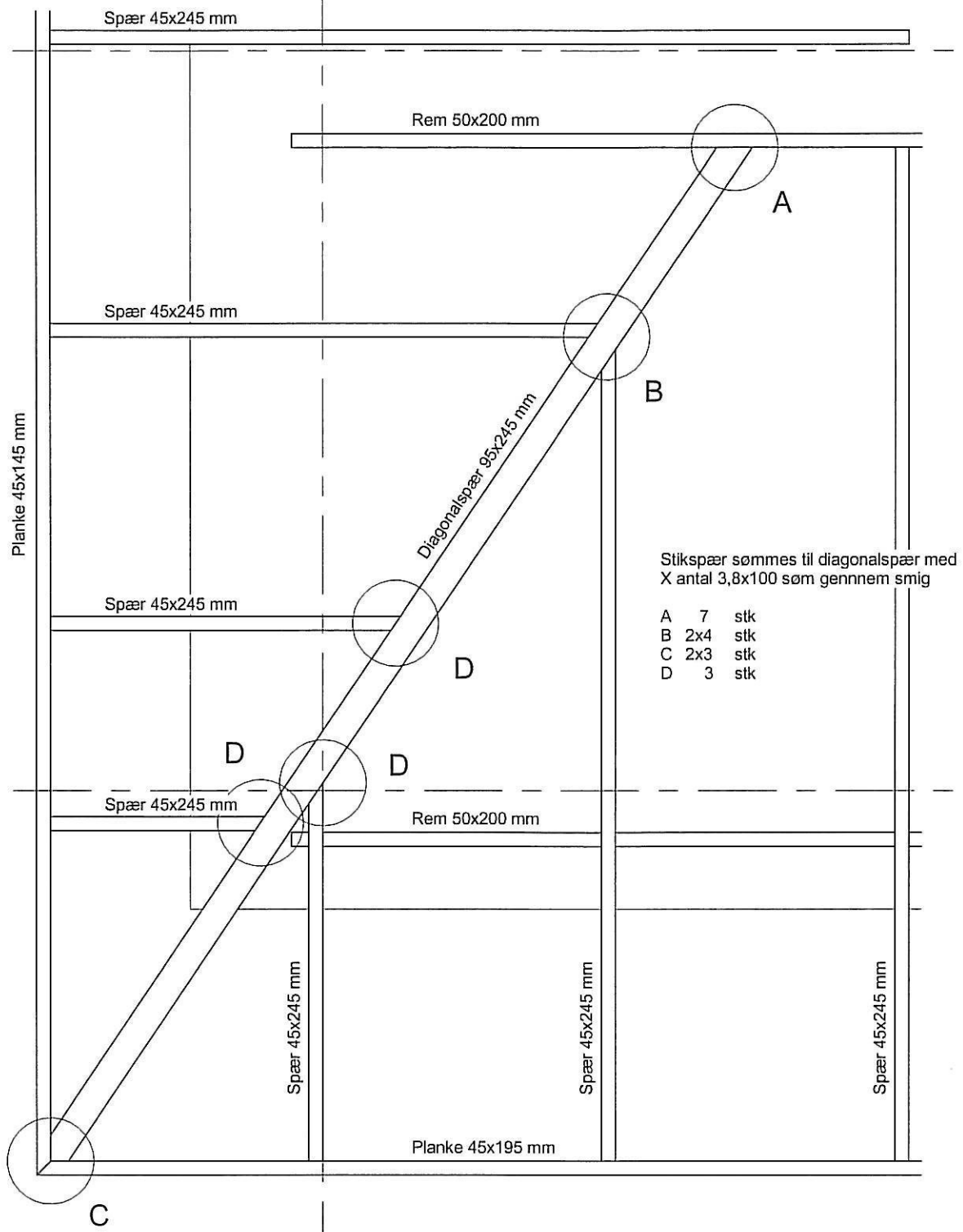


Tagudhæng ved gavle modul 42 og 43 - forplade i facadeelement fjernet

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	02/05/09		1 : 20	BD17



Planudsnit tagspær/udhæng

Rev:

KOLSTRUP

Sag nr.	Dato	Rev. dato	Mål	Detalje nr.
07.877.1	09.02.2009		1 : 20	BD18

	09.02.2009	AJS	MIP		
REV	DATO	TEGN	KS	SAG 07.877.1	MÅL

KOLSTRUP

BOLIGFORENING AFD. 16

BYGGEPLADS	UGLEKÆR 2-8 OG 10-16
BYGHERRE	SALUS BOLIGADMINISTRATION

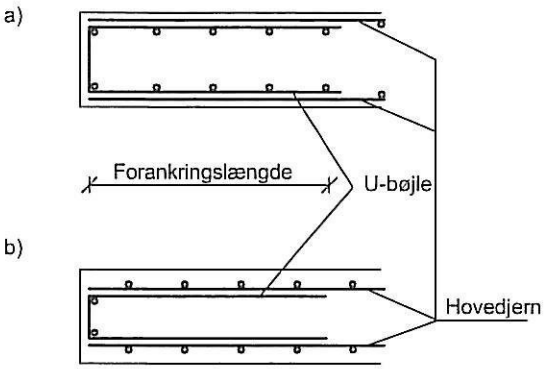
O ARKITEKT	NOVA5 arkitekter as Sankt Annæ Passagage G DK-1262 København K T +45 3393 0880
● INGENIØR	Hundsbæk & Henriksen as Rådgivende ingeniører Karolinegade 3 6000 Kolding T +45 7943 5300
O LANDSKAB	Thing & Wainø landskabsarkitekter aps St. Kongensgade 40H 1264 København T +45 3311 1335

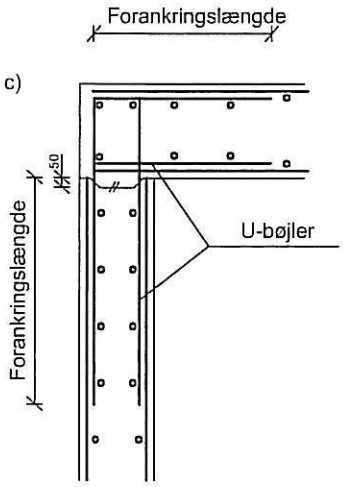
Blok 13 og 14
Betonnote

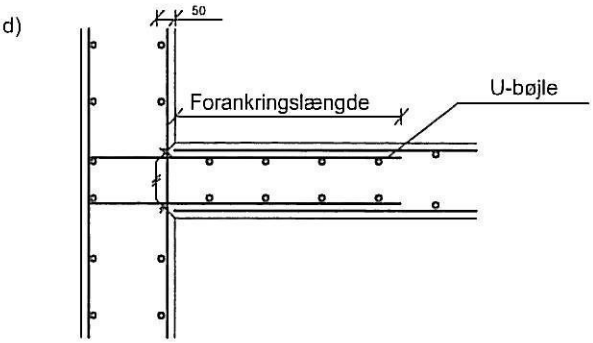
GENERELLE DETALJER OG PRINCIPPER:

U-bøjler og støbeskel:

Princip for ilægning af U-bøjler og udførelse af støbeskel







Hvis ikke andet er anført, gælder altid, uanset om det er vist på tegningerne:

- Støbeskel skal udføres som anført i DS411.
- Gennem støbeskellet føres mindst armeringen
  (R) : 0,50 % af betonarealet.
  (P,Y) : 0,25 % af betonarealet.
  Armeringen skal være jævnt fordelt over tværsnittet og minimum føres trækforankringslængden forbi støbeskellet
- U-bøjler og hovedjern skal ligge i samme plan
- U-bøjler udføres med samme diameter og indbyrdes afstand som hovedjern hvis ikke andet er anført.

GENERELT VEDRØRENDE ARMERINGSUDFORMNING:

Den på tegningen viste armering er at opfatte som princip for armeringsudformningen.
Dette betyder at entreprenøren for visse dele må udarbejde detaljerede armeringstegninger for afklaring.

Stød

For stød der ikke er vist på tegningerne skal tværarmering indlægges hvis den fornødne tværarmering, jf. DS411, ikke er tilstede.
Hvis stængerne stødes i samme snit i mere end 1/2 af pladerne og mere end 1/3 i bjælker og skiver,
forøges stød/forankringslængden med 50%.

Udsparinger:

Alle udsparinger for rørgennemføringer tilstøbes efter installationsmontage, hvis ikke andet er anført.

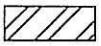
Fundamenter:

Hvis ikke andet er anført, gælder altid, uanset om det er vist på tegningerne:

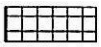
- Der udlægges 50 mm renselag under bundplade og alle fundamentsbjælker
- Armering føres ubrudt rundt ved bygningshjørner.

SIGNATURER:

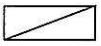
FOK: Kote til overside fundament
FUK: Kote til underside fundament
UK: Kote til underside hul
BR: I begge retninger
BS: I begge sider
OS: I overside
US: I underside
IM: I midten
H: Højde af et emne, f.eks hul eller bjælke
T: Tykkelse af beton

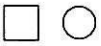

Stål


Beton in-situ, eller elementer (snitkontur)


Isolering


Hul i beton


Udsparing, dybde angivet


Indstøbt gulvafløb eller lignende

Synlige konturer

Skjulte konturer

Armering eller andet indstøbt stål

Støbeskel

NOTE:

Ubenævnte mål er i mm
Koter er realtive og angives i m.
Betonkonstrutioner udføres iht. DS481 og DS482

Materialer:

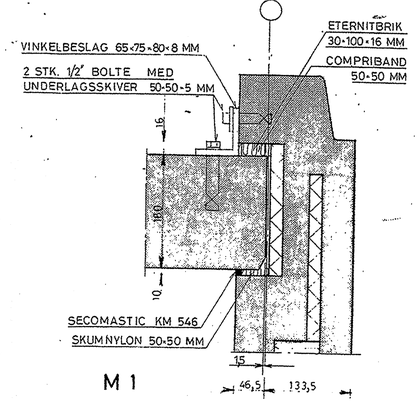
Beton:

Betegnelse	f ck [MPa]	Miljø-klasse	Kontrol-klasse	Største sten [mm]	Farve
B-5-P	5	Passiv	Normal	32	Grå
B-25-M	25	Moderat	Normal	32	Grå
B-35-A	35	Aggressiv	Normal	32	Grå

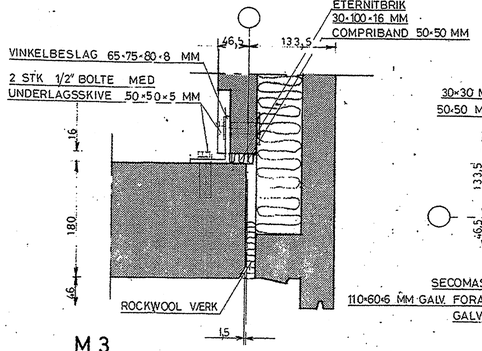
Renselag	B-5-P
Fundamentskonsoller	B-25-M
Dæk	B-25-M
Udstøbning i eksist. vægge	B-25-M
Elevatorgruber	B-35-A

Armering:

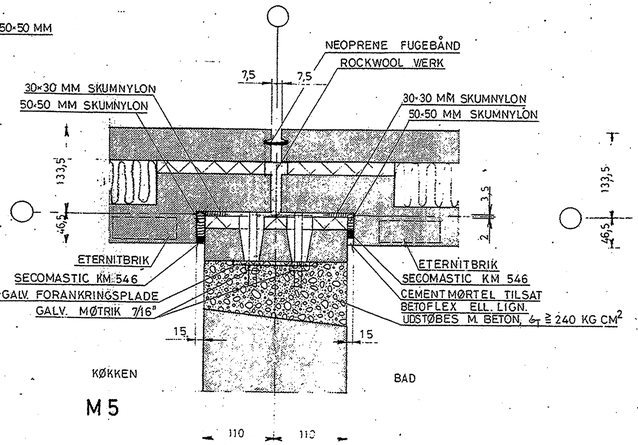
Armeringen skal opfylde kravene i DS 13080.
Y angiver dansk Ny Tentor fyk = 550 N/mm²
R angiver rundjern, fyk = 235 N/mm²



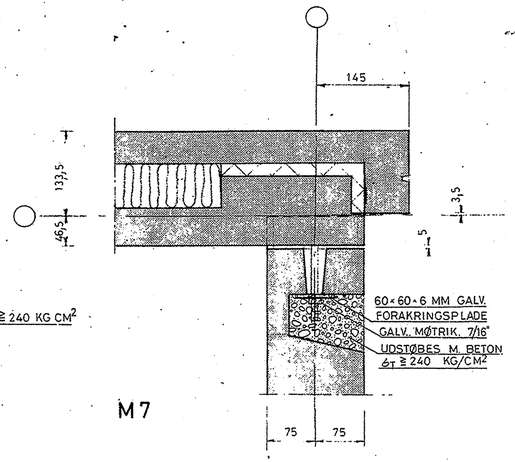
M 1



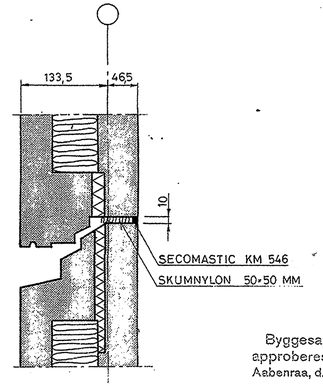
M 3



M 5



M 7



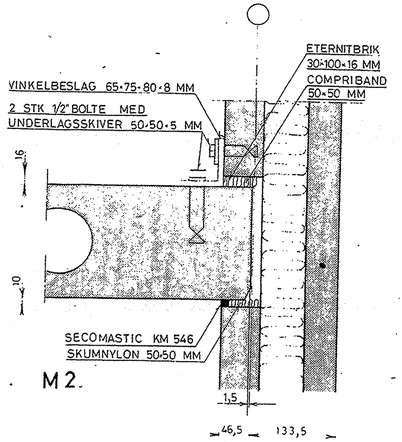
M 9

Byggesag nr. 8102
approberes på betingelser
Aabenraa, d. 23/4 1974

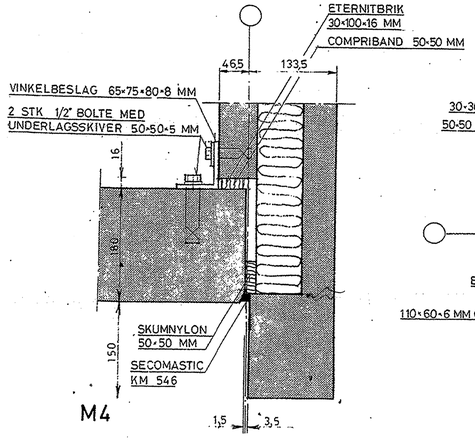
Bygningsinspektør.

BESLAG

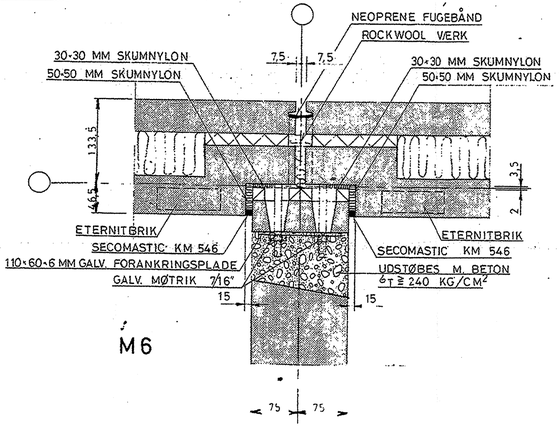
SE TEGNING NR. (29) Z 25459 I MÅL 1:5



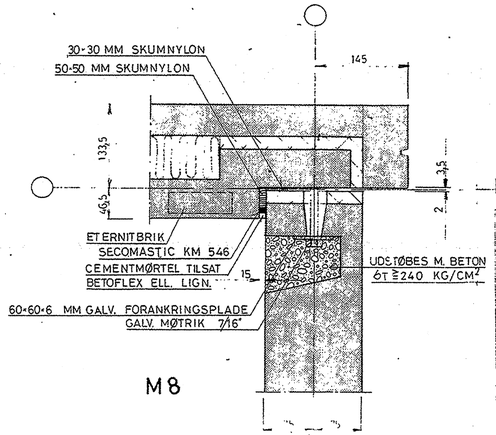
M 2.



M 4



M 6



M 8

BOLIGFORENINGERNES TYPEHUSE

BYGGERIETS NAVN, ART:
ETAGETYPEHUSE
GENERELT

INDHOLD:
MONTAGEDETAIL M 1 - 9 (FACADER)

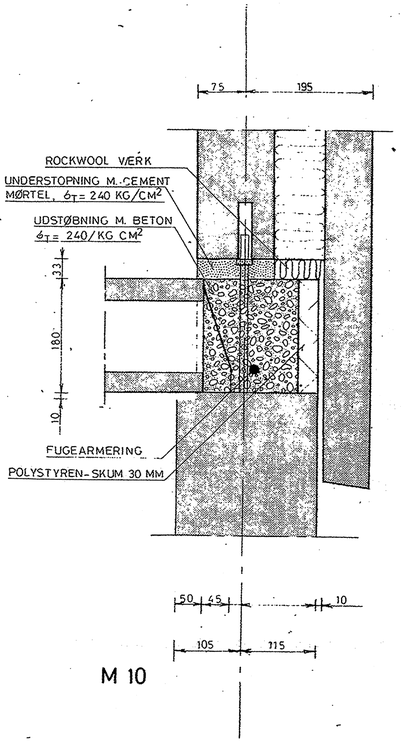
MÅL:	DATO:	TEGNET AF	FORMAT:
1:5	15.11.72.	IS	78×30

SAG NR. 720

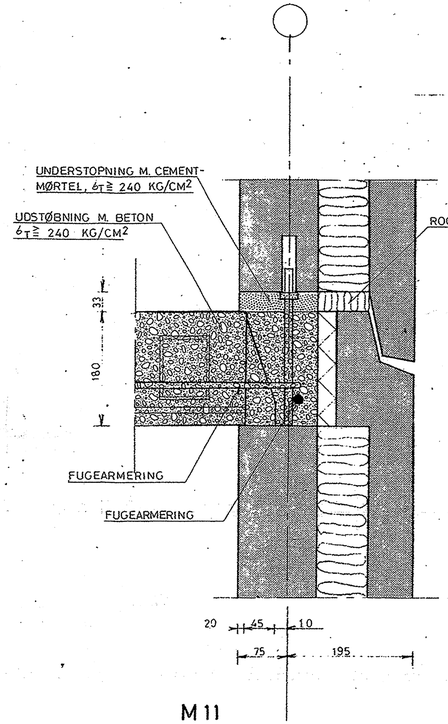
TEGNING NR. 25451

EMNE:	VARE	SIDE NR
(29)	Z	62

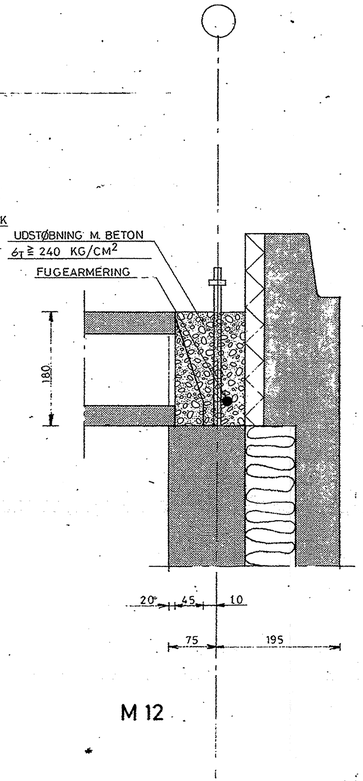
TEKNISK SEKRETARIAT. FA (01 32) 82 12
PROJEKTERINGS AFD. : (01) 14 12 44
A/S »BYGGESELSKABET AF 9 MARTS 1968« FINSENVEJ 15
A/S »BYGGESELSKABET AF 9 MARTS 1968« DR TVERGADE 3
2000 KØBENHAVN F
1302 KØBENHAVN K



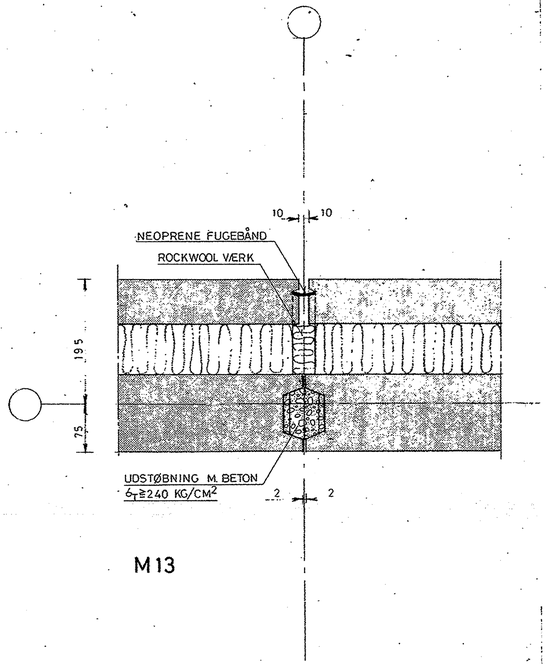
M 10



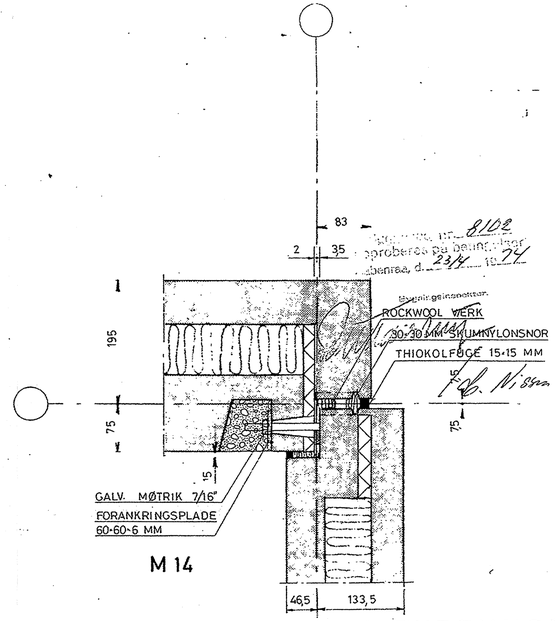
M 11



M 12



M13



M 14

BOLIGFORENINGERNES TYPEHUSE

BYGGERIETS NAVN, ART
ETAGETYPEHUSE

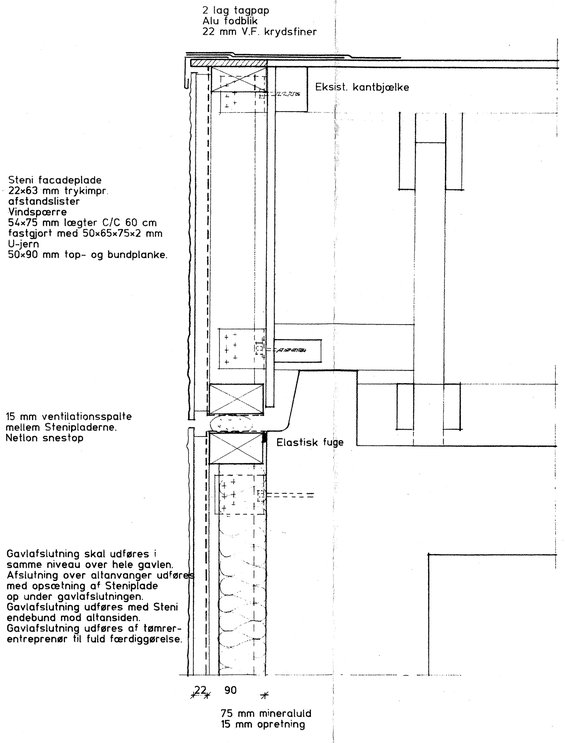
GENERELT

INDHOLD:
MONTAGEDETAIL M 10 - 14 (GAVLE)

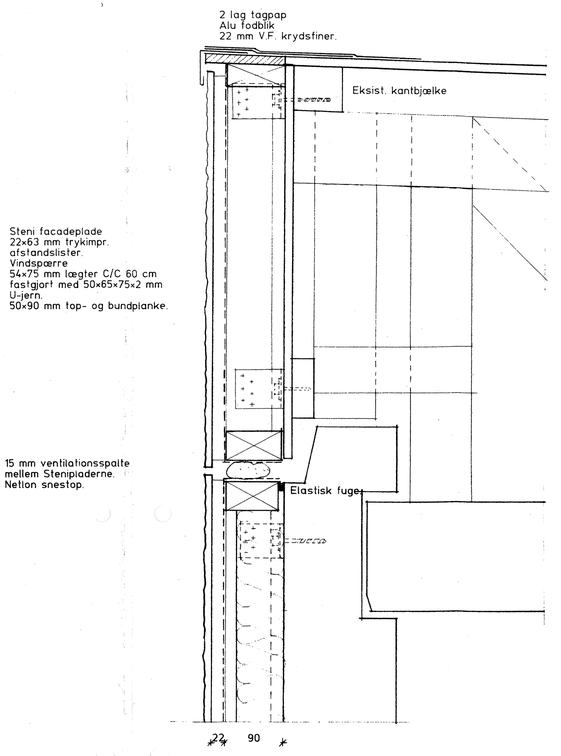
MÅL:	DATO:	TEGNET AF	FORMAT
1:5	15.11.72.	IS	78×30

SAG NR		
720		
TEGNING NR		
25452		
EMNE	VARE	SIDE NR
(29)	Z	63

TEKNISK SEKRETARIAT: FA (01 32) 82 12 A/S »BYGGESELSKABET AF 9. MARTS 1968« FINSENSVEJ 15 . 2000 KØBENHAVN F
PROJEKTERINGS AFD. : (01) 14 12 44 . A/S »BYGGESELSKABET AF 9 MARTS 1968« DR TVÆRGADE 3 . 1302 KØBENHAVN K



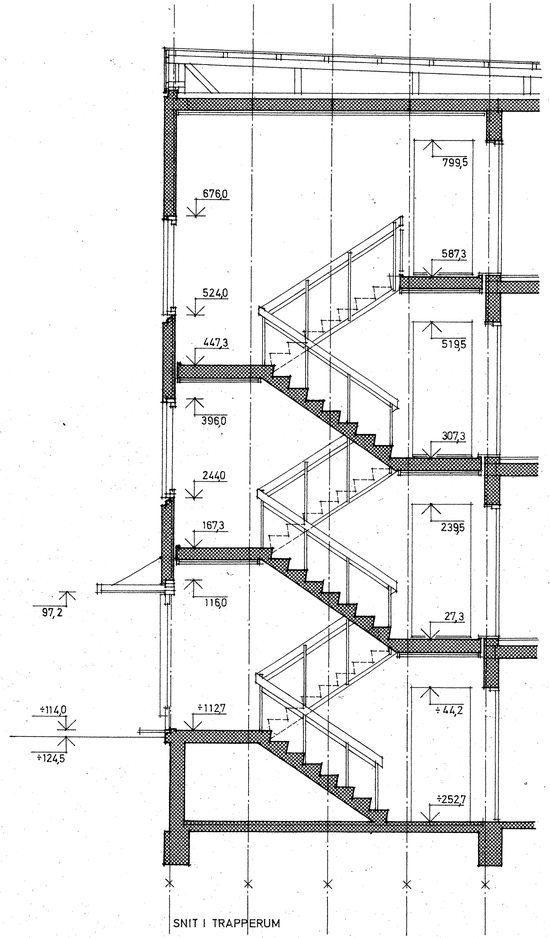
LODRET SNIT GAVLAFSLUTNING I MÅL 1:5



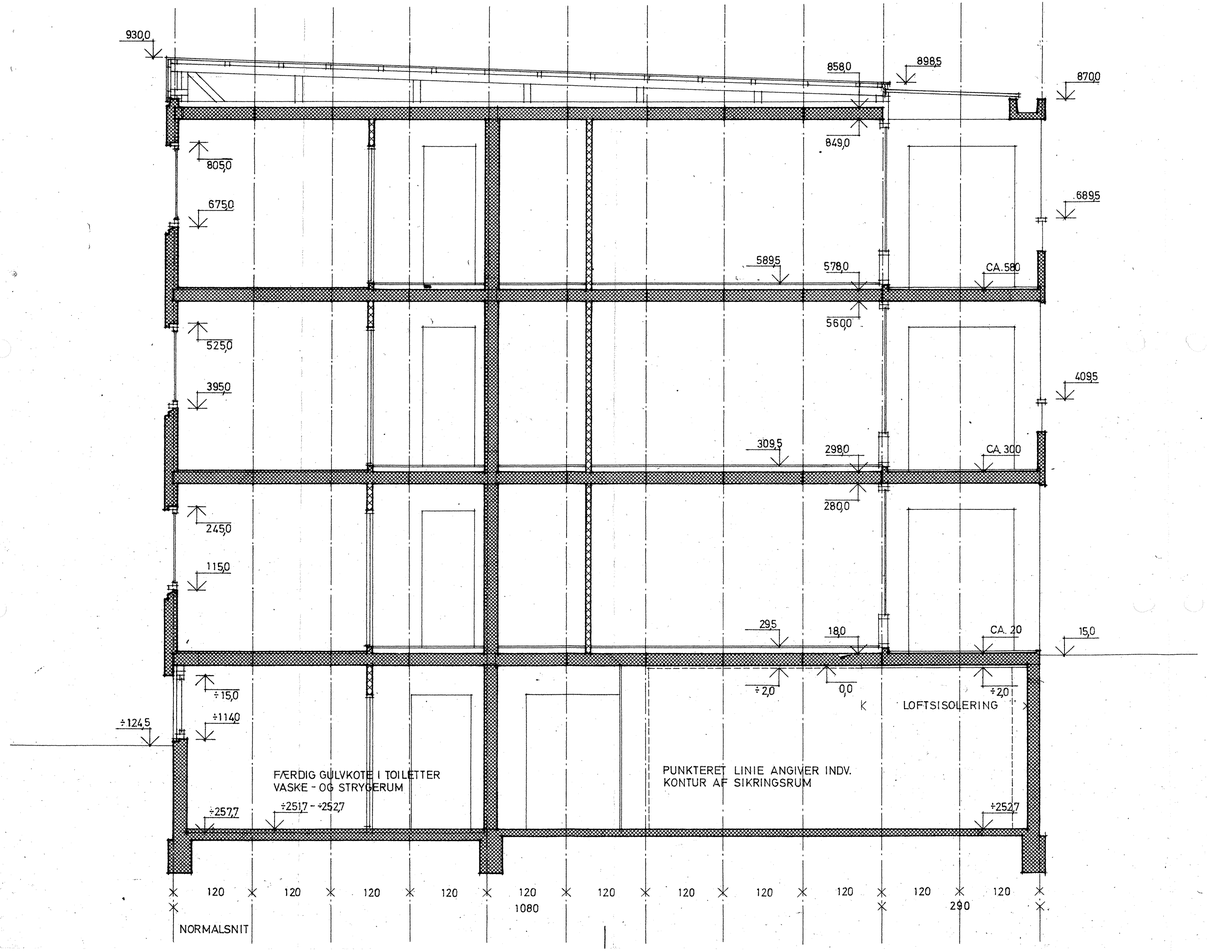
LODRET SNIT TAGAFSLUTNING INDGANGSFACADE I MÅL 1:5

Projekt	RENOVERING AF LANGKÆRPARKEN, AFD. 11	Dato	05.02.1990
Matr. nr.	7a M.FL., TILST BY, TILST	Sag nr.	3015.87
Bygherre	ÅBYHØJ BOLIGFORENING BIRKEPARKEN 4, 8230 ÅBYHØJ	Sign.	JJE
		Mål	1:5
Emne	LODRETTE SNIT TAGAFSLUTNING I GAVL OG INDGANGSFACADE	Tegn. nr.	1.304

Dansk Arkitekt- & Ingeniørkontor af 1945 SILKEBORG · RANDERS · ÅRHUS · ESBJERG
Arkitekter MAA · Ingeniører FRI Vestergade 48 H · 8100 Århus C · Tlf. 86 12 51 66 · Fax 86 20 28 66



SNIT I TRAPPERUM



NORMALSNIT

BYGNINGSINSPEKTORAT VEST

ARBEJDSTILSYNET KREDS ÅRHUS AMT

Modt. den	21 NOV. 1978
J. nr.	751 204/20-3 3/78

BOLIGFORENINGERNES ETAGETYPEHUSE

SEKRETARIAT: FÆLLESORGANISATIONEN AF ALMENNYTTIGE DANSKE BOLIGSELSKABER, LINDEVANGS ALLE 6, KØBENHAVN F., GO (0136) 8980

MÅL:	DATO:	INDHOLD:
1:50	1. 1. 68	SNIT I BYGNING

EMNE:	VARE:	SIDE NR.:
(00)	–	79

REV. AF: | SAG NR.: 180 | TEGNET AF: | TEGNING NR.: 0285

BØRGE KJÆR, ARKITEKT, M.A.A., BREDGADE 37, KØBENHAVN K., TELEFON: MINERVA (0154) 5795

VENTILATION
SE TEGNING NR. 57 Z 01 I MÅL 1:10

FALDRØR
SE TEGNING NR. 52 Z 01 I MÅL 1:5

PLAN AF EL
SE TEGNING NR. 60 – 41 I MÅL 1: 50
SE TEGNING NR. 60 – 40 I MÅL 1: 50

FASTGØRELSE AF ANTENNE
SE TEGNING NR. 64 Z 04 I MÅL 1:20

ET LAG AF „COPAL" B, GRÅ SKIFER, BR. 100 CM, KLÆBES PÅ
ET LAG „SICORAL" ASFALT MINERALFELT, BR. 100 CM, KLÆBES PÅ
FAST KLÆBEPIX 1,25 KG PR. M² PR. LAG
(47) Ln 9,01

12,7 MM KRYDSFINERPLADER (47) Rz 9,01

3x3" AASE
2x2" UDFYLDNINGSLÆGTER OG 2 STK. 1x5" HOVED
2x4" GITTER
2 STK. 1x3" FOD

OVERSIGT OVER SPÆRFAG
SE TEGNING NR. 27 – 05 I MÅL 1:100
VINDAFSTIVNING I GAVLE
SE TEGNING NR. 27 Z 02 I MÅL 1:5
RØGSKILLERUM
SE TEGNING NR. 27 Z 05 I MÅL 1:5
DETAILLER VEDR. TAG
SE TEGNING NR. 27 Z 06 I MÅL 1:5
SPÆRFAG
SE TEGNING NR. 27 G1 02 I MÅL 1:20
BRANDVÆG I TAGRUM
SE TEGNING NR. 27 E 02 I MÅL 1:20

PLACERING AF SNIT
SE TEGNING NR. 09 – 36 I MÅL 1:100
SE TEGNING NR. 09 – 35 I MÅL 1:100

TAGKANT
SE TEGNING NR. 27 – 04 I MÅL 1:2

K.933,0

GESIMSELEMENT
SE TEGNING NR. 21 Gf2 I MÅL 1:1, 1:5

DETAIL AF SAMLING
SE TEGNING NR. 29 Z 23 I MÅL 1:1

K.805,0

OVERSIGT OVER VINDUER I TRAPPESIDE
SE TEGNING NR. 30 – I MÅL 1:100

OVERSIGT OVER VINDUER FÆRDIGVARER
SE TEGNING NR. 31 X 11 I MÅL 1:10
12

VINDUER MONTERET
SE TEGNING NR. 31 – 22 I MÅL 1:2
23, 24

VINDUER DETALJER
SE TEGNING NR. 31 Z 25 I MÅL 1:1
26, 27

BRYSTNINGSELEMENT
SE TEGNING NR. 21 Gf2 I MÅL 1:1, 1:5

DETAIL AF SAMLING
SE TEGNING NR. 29 Z 15 I MÅL 1:1

K.525,0

SNIT D

RUM 2 OPSTALTER
SE TEGNING NR. 09 – 07 I MÅL 1:20

K.675,0

VEDR. INSTALLATIONER OG VÆG
SE TEGNING NR. 50 Z 02 I MÅL 1:10
ELLER 50 Z 28 I MÅL 1:10

INSTALLATION AF RADIATOR
SE TEGNING NR. 56 Z 04 I MÅL 1:10

RUM 22 OPSTALTER
SE TEGNING NR. 09 – 22 I MÅL 1:20

DØR MONTERET
SE TEGNING NR. 32 – 05 I MÅL 1:2

RUM 3 OPSTALTER
SE TEGNING NR. 09 – 08 I MÅL 1:20

VEDR. INSTALLATIONER OG VÆG
SE TEGNING NR. 50 Z 06 I MÅL 1:10

K.858,0

K.840,0

LETBETON SKILLEVÆGGE
SE TEGNING NR. 22 – 01 I MÅL 1:20
SE TEGNING NR. 22 – 02 I MÅL 1:20

RUM 17 OPSTALTER
SE TEGNING NR. 09 – 19 I MÅL 1:20

OVERSIGT OVER INDV. DØRE FÆRDIGVARER
SE TEGNING NR. 32 X 03 I MÅL 1:20

DØRE MONTERET
SE TEGNING NR. 32 – 05 I MÅL 1:2
SE TEGNING NR. 32 – 06 I MÅL 1:2
SE TEGNING NR. 32 – 07 I MÅL 1:2

DØRE DETALJER
SE TEGNING NR. 32 Z 05 I MÅL 1:1

K.589,5
K.578,0
K.580,0

RENDER OG NEDLØB 1:5
SE TEGNING NR. 38 Z 01 I MÅL 1:50 1:500
DETAILLER AF TAGKANT
SE TEGNING NR. 27 – 04 I MÅL 1:2

OVERSIGT OVER DÆKELEMENTER
SE TEGNING NR. 20 – I MÅL 1:50

OVERSIGT OVER ALTANGLASPARTI
SE TEGNING NR. 20 – I MÅL 1:100

OVERSIGT OVER VÆGELEMENTER PAA 2. SAL
SE TEGNING NR. 20 – I MÅL 1:50

OVERSIGT OVER ALTANGLASPARTI – FÆRDIGVARE
SE TEGNING NR. 26 X 02 I MÅL 1:20

ALTANGLASPARTI MONTERET
SE TEGNING NR. 26 – 02 I MÅL 1:2

ALTANGLASPARTI – DETALJER
SE TEGNING NR. 26 Z 39 I MÅL 1:1

OVERSIGT OVER DÆKELEMENTER
SE TEGNING NR. 20 – I MÅL 1:50

DETAIL AF SAMLING
SE TEGNING NR. 29 Z 15 I MÅL 1:1

VEDRØRENDE UDSUGNINGSVENTIL
SE TEGNING NR. 57 Z 02 I MÅL 1:1

DÆKELEMENT
SE TEGNING NR. 23 Gf2 16 I MÅL 1:10

DÆKELEMENT
SE TEGNING NR. 23 Gf2 17 I MÅL 1:10

VÆGELEMENT
SE TEGNING NR. 22 Gf2 35 I MÅL 1:10

PRINCIPTEGNING FOR DÆKELEMENT
SE TEGNING NR. 23 Gf2 01 I MÅL 1:10

FUGESAMLINGER
SE TEGNING NR. 23 Z 01 I MÅL 1:5
SE TEGNING NR. 23 Z 02 I MÅL 1:5

DETAIL AF SAMLING
SE TEGNING NR. 26 Z 04 I MÅL 1:1
SE TEGNING NR. 26 Z 05 I MÅL 1:1

AFFASNING AF ALTANVANGE
SE TEGNING NR. 26 Z 17 I MÅL 1:2

OVERSIGT OVER VINDUESPLADER
SE TEGNING NR. 45 X 01 I MÅL 1:20, 1:1
GULVBELÆGNING
SE BESKRIVELSE (27,2), (43) Hz9

ISOLERING I GULVE
SE BESKRIVELSE (27.2)

OVERSIGT OVER VÆGELEMENTER PAA 1. SAL
SE TEGNING NR. 20 – I MÅL 1:50

K.395,0

INSTALLATION AF RADIATOR
SE TEGNING NR. 56 Z 07 I MÅL 1:10

SNIT E

VEDR. INVENTARETS INDBYGNING
SE TEGNING NR. 79 Z 02 I MÅL 1:1
SE TEGNING NR. 79 Z 03 I MÅL 1:1

DETAILLER AF GULVBE., VINDUESPL., FODPA.
SE TEGNING NR. 45 Z 01 I MÅL 1:1

EL-RØR I KARM
SE TEGNING NR. 63 Z 27 I MÅL 1:1

K.309,5
K.298,0
K.280,0

DØRSTOP OG HOLD FOR DØR
SE TEGNING NR. 31 – 14 I MÅL 1:2

PRINCIPTEGNING FOR ALTANDÆK
SE TEGNING NR. 26 Gf2 I MÅL 1:10

BRYSTNINGSELEMENT
SE TEGNING NR. 26 Gf2 17 I MÅL
BRYSTNINGSELEMENT DETALJER
SE TEGNING NR. 26 Z 37 I MÅL

OVERSIGT OVER FACADEELEMETER
SE TEGNING NR. 20 – I MÅL 1:100

OVERSIGT OVER FACADEELEMENTER
SE TEGNING NR. 20 – I MÅL 1:50

BRYSTNINGSELEMENT
SE TEGNING NR. 21 Gf2 I MÅL 1:1, 1:5

DETAIL AF SAMLING
SE TEGNING NR. 29 Z 15 I MÅL 1:1

K.245,0

SNIT E

DETAIL AF SAMLING
SE TEGNING NR. 29 Z 21 I MÅL 1:1

OVERSIGT OVER DÆKELEMENTER
SE TEGNING NR. 20 – I MÅL 1:50

OVERSIGT OVER GULVBELÆGNINGER, VINDUESPLADER, FODPANELER, LISTER

OPGANGSPLAN TYPE 1
SE TEGNING NR. 40 – 01 I MÅL 1:50

OPGANGSPLAN TYPE 2
SE TEGNING NR. 40 – 02 I MÅL 1:50

OPGANGSPLAN TYPE 3
SE TEGNING NR. 40 – 03 I MÅL 1:50

OPGANGSPLAN TYPE 4
SE TEGNING NR. 40 – 04 I MÅL 1:50

OVERSIGT OVER VÆGELEMENTER I STUEN
SE TEGNING NR. 20 – I MÅL 1:50

RUM 8 OPSTALTER
SE TEGNING NR. 09 – 08 I MÅL 1:20

K.115,0

RUM 22 OG 25 OPSTALTER
SE TEGNING NR. 09 – 22 I MÅL 1:20

RUM 20 OPSTALTER
SE TEGNING NR. 09 – 21 I MÅL 1:20

RADIATOR INSTALLATIONER
SE TEGNING NR. 56 Z 04 I MÅL 1:10
SE TEGNING NR. 56 Z 05 I MÅL 1:2
SE TEGNING NR. 56 Z 06 I MÅL 1:2
SE TEGNING NR. 56 Z 07 I MÅL 1:10

I BØGEPARKET
1 1/2 × 2 1/4" STRØER
1×10×10 CM. BLØD FIBERPLADE
PR. MAX. 70 CM.
OPKLØDNING MED 10×10 CM BRIKKER AF
FYR OG TAGPAPSKIVER
5 CM. BATTS (I STUEETAGEN)

OVERSIGT OVER KARMPARTIER
SE TEGNING NR. 30 – I MÅL 1:100

OVERSIGT OVER KARMPARTIER FÆRDIGVARER
SE TEGNING NR. 31 X 05 I MÅL 1:20

KARMPARTI MONTERET
SE TEGNING NR. 31 – 08 I MÅL 1:2

KARMPARTI DETALJER
SE TEGNING NR. 31 Z 07 I MÅL 1:1
08, 09, 10, 11

SLIDLAG

K.29,5
K.18,0
K.0,0

BRYSTNINGSELEMENT
SE TEGNING NR. 21 Gf2 I MÅL 1:1, 1:5

OVERSIGT OVER KÆLDERVINDUER
SE TEGNING NR. 30 – I MÅL 1:100

OVERSIGT OVER KÆLDERVINDUER FÆRDIGVARE
SE TEGNING NR. 31 X 08 I MÅL 1:20

KÆLDERVINDUER MONTERET
SE TEGNING NR. 31 – 12 I MÅL 1:2
17, 18, 20

KÆLDERVINDUER DETALJER
SE TEGNING NR. 31 Z 17 I MÅL 1:1
19, 20, 21, 22, 23, 24

99

K+114,0

DETAIL AF SAMLING
SE TEGNING NR. 29 Z 26 I MÅL 1:1

SNIT I NORMALFUGE
SE TEGNING NR. 23 Z 01 I MÅL 1:1

SNIT I FUGE MED ELRØR
SE TEGNING NR. 23 Z 02 I MÅL 1:1

SNIT E

UDV. ARMATUR
SE TEGNING NR. 63 Z 21

KÆLDERYDERVÆGGE OVERSIGT
SE TEGNING NR. 20 – I MÅL 1:100

OVERSIGT OVER RADIATORER I KÆLDER
SE TEGNING NR. 60 – I MÅL 1:50
RØRFØRING, OPHÆNGNING OG TILSLUTNING AF RADIATOR
SE TEGNING NR. 60 Z I MÅL 1:2

143,7

K+257,7
K+251,7 – 252,7
K+25,2,7

DETAIL AF SAMLING
SE TEGNING NR. 29 Z 26 I MÅL 1:1

K+20

SNIT
SE TEGNING NR. 29 Z 29 I MÅL 1:1

K+4,0

VEDR. TRÆFTSPLADER 2 CM FLAMINGO FOAM
SE BESKRIVELSE (29,1), (23) Kn 6

SNIT
SE TEGNING NR. 22 E 03 I MÅL 1:10

SNIT I NØDUDGANG
SE TEGNING NR. 21 E 06 I MÅL 1:10

SIKRINGSRUM

20 CM KOMPRIMERET SAND
VED LECA BETON UDLÆGGES OVER SANDLAGET
0,1 MM. PLASTFOLIE — (11) Ln 6.01

K+15,0

SNIT
SE TEGNING NR. 26 Z 22 I MÅL 1:1
SE TEGNING NR. 21 E 05 I MÅL 1:10

K+17,0

K+16,0

1/4 ST. MUR
(21) Fg 2.01

SAND

SINGELS

STIGETRIN

K+98,0

OVERFLADEVAND FØRES TIL OMFANGSDRÆN
(21) Dpt 1.01

OVERSIGT OVER VÆGELEMENTER I KÆLDER
SE TEGNING NR. 20 – I MÅL 1:50

RELATIVE KOTER
SE TEGNING NR. 00 – 79 I MÅL 1:50

FUNDAMENTS – OG KLOAKPLAN
SE TEGNING NR. 10 – I MÅL 1:100

BYGNINGSKLOAK
SE TEGNING NR. 12 – I MÅL 1:100

FUNDAMENTER
SE TEGNING NR. 10 E I MÅL 1:10

FUNDERINGSPÆLE
SE TEGNING NR. 10 Z I MÅL 1:20

E D
14 20 17 9 19 13 3 23 22 21 2 1 7 11 12 8
E D OPGANGSPLAN TYPE 1

E
14 20 18 10 19 13 5 24 4 25 21 2 1 7 11 12 8
E OPGANGSPLAN TYPE 2

E
14 20 18 16 15 19 13 5 6 25 27 2 1 7 11 12 8
E OPGANGSPLAN TYPE 4

E
E KÆLDERPLAN

BOLIGFORENINGERNES ETAGETYPEHUSE

TEKNISK SEKRETARIAT: FA (01 32) 82 12 A/S „BYGGESELSKABET AF 9. MARTS 1966" FINSENSVEJ 16 . 2000 KØBENHAVN F
PROJEKTERINGS AFD.: (01) 14 12 44 A/S „BYGGESELSKABET AF 9. MARTS 1966" DR. TVERGADE 3 . 1302 KØBENHAVN K

MÅL:	DATO:	INDHOLD:			
1:20	5.1.1969	SNIT D OG E LODRET NORMALSNIT 3 ETAGER			
SF	19.11.69	HENVISNINGER, ALTANSKYDE – VINDUER OG NEDLØB	EMNE: (09)	VARE: —	SIDE NR.: 38
TEV. AF.:		SAG NR.: 520 TEGNET AF: GH		TEGNING NR.: 0386	

ESCUELA UNIVERSITARIA POLITÉCNICA
DE LA ALMUNIA DE DOÑA GODINA (ZARAGOZA)

Rehabilitación y remodelación de viviendas

(Refurbishment and conversion of multistorey building)

Nº TFG: 422.13.194

Autor: Yolanda Calvo Mateo

Director: José Ángel Pérez Benedicto

Fecha: 08-09-2.01508-09-2.015